October 2025

Holistic Network Design – Implementation Plan

SEA Environmental Report - Appendices



NESO
National Energy System Operator

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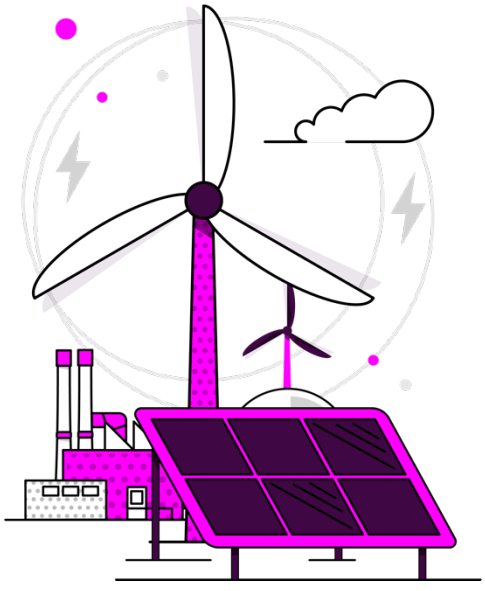
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Appendix A – SEA Scoping Consultation Responses



Comment No.	Respondent	Comment	Action
1	Cadw	Q1 Plans & Programmes. Need to include Historic Environment Group 2020 Historic Environment and Climate Change in Wales Sector Adaptation Plan in the climate change section of Appendix A. Need to include Historic Environment (Wales) Act 2023 in the Welsh section of the Cultural heritage and historic environment section of Appendix A	Historic Environment (Wales) Act 2023 was already included within the Appendix. Historic Environment and Climate Change in Wales Sector Adaptation Plan has been added to the Appendix in the SEA scoping report
2	Cadw	Q2. Agree with geographical and temporal scope.	No action needed
3	Cadw	Q3. Agree with scoping of environmental topics.	No action needed
4	Cadw	Q4. Agree with identification of relevant environmental issues.	No action needed
5	Cadw	Q5. Agree with data and scale.	No action needed
6	Cadw	Q6. No additional data proposed.	No action needed
7	Cadw	Q7. Agree with assessment approach.	No action needed
8	Cadw	Q8. Agree with draft SEA Objectives.	No action needed
9	Cadw	Q9. Agree with proposed timescales and consultees.	No action needed
10	Cadw	In the summary of the history of Wales given in Section 17.5 there is a need to include Roman invasions and settlement, including the network of roads and forts centred on the Roman Fortresses at Caerleon and Chester.	This information has been included in the SEA scoping report.
11	Natural England-SSEP response	SEA for SSEP should have consideration for Natural England's offshore wind and cables best practice (https://defra.sharepoint.com/sites/WorkDelivery2512/SitePages/Home.aspx?OR=Teams-HL&CT=1651579258376&params=eyJBcHBOYW1lIjoiVGVhbXMtRGVza3RvcCI	This document has been reviewed for inclusion in the SEA ER, and with relevant text added to the appendix section.

Comment No.	Respondent	Comment	Action
		slkFwcFZlcnNpb24iOiIyNy8yMjAzMDcwMTYxMCJ9). Note must be contacted for access	
12	Natural England-SSEP response	Sediment and physical processes should be considered in the SEA, current research project (UKRI/NERC eSWEETS project (Enabling Sustainable Wind Energy Expansion in Seasonally Stratified Seas)) may provide useful information.	This research project has been reviewed, it refers to scientific research on offshore floating wind farms based on how large areas of water in the NW European Shelf undergo process of thermal stratification with a thermocline developing annually based on the temperature difference between surface water and deeper waters which contributes to biological productivity, tidal flows will directly control the thermocline. The introduction of floating offshore wind farms at the surface will generate extra tidal turbulence and may affect the thermocline and associated productivity. As this is related to offshore floating wind farms, this research is beyond the scope of this SEA assessing submarine cabling.
13	Natural England-SSEP response	Natural England have advised for OWF Round 5 that areas of up welling and biodiversity are avoided. We would also welcome this for the SSEP SEA.	It should be noted that upwelling and biodiversity is of importance for offshore wind rather than cables due to the impacts of substructures on the ocean floor associated with wind farm foundations, as this SEA is focused on submarine cables the likelihood of seafloor substructures is minimised and

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			likely only in situations where cable protection materials are needed.
14	Natural England-SSEP response	Compensation sites (for compensatory measures for AEOI) need to be included as a constraint and that these (once identified) should be treated as designated sites in terms of protection etc. EN-1 sets out obligations for compensation sites:5.4.5 As a matter of policy, the following should be given the same protection as sites covered by the Habitats Regulations and an HRA will also be required: (a) potential Special Protection Areas and possible Special Areas of Conservation; (b) listed or proposed Ramsar sites; and (c) sites identified, or required, as compensatory measures for adverse effects on any of the other sites covered by this paragraph.	This comment has been passed along to AECOM for review and inclusion if appropriate
15	Natural England-SSEP response	Overall, there appears to be a lack of environmental opportunities within the SEA, including restoration of habitats, Biodiversity Net Gain (BNG) and Marine Net Gain (MNG). There is mention of MNG (pg 14), but with the zonal approach we would expect to see greater refinement and opportunities considered within different areas. For Round 5, the Crown Estate will require Positive Environmental Value and Social Value within the Region and is working with stakeholders to develop a long list of potential projects.	Text has been added to SEA ER, whereby this should be identified at project level, with route length increases more likely for greater likelihood of need for marine/biodiversity net gain e.g., habitat restoration. Likely after cable filled in habitat will restore to an extent. For onshore can be increased species richness for net gain. It was also noted as part of mitigation measures to ensure restoration to same/better conditions, however exact net gain will be dependent on area impacted and what is present there

Comment No.	Respondent	Comment	Action
16	Natural England-SSEP response	Where irreplaceable habitats are included, Marine Irreplaceable Habitats (MIH) also need consideration for marine/offshore. The data layers for MIH will be available soon and we will share these as soon as possible.	This data was unavailable in time for inclusion within the SEA ER and this has been noted in the data gap section.
17	Natural England-SSEP response	Large parts of England are affected by water scarcity issues, and over-abstraction can impact on habitat condition. We advise further consideration of water availability in the SEA, e.g. using water resource management plan (WRMP) data to highlight zones where new water supplies may be constrained.	Text has been added to mitigation section of SEA ER regarding having an awareness of water resources during construction process.
18	Natural England-SSEP response	We welcome the identification of environments that store carbon within each zone. However, in terms of issues, the degradation of peat is a serious issue within several parts of the country, such as the fens in Cambridgeshire. We advise that this should be highlighted as an issue, both in terms of the loss of a valuable habitat that supports biodiversity, but also in terms of its ability to also emit carbon rather than store it when degraded.	Information on peat has been added to the SEA ER under Geology, Soils and Land use section
19	Natural England-SSEP response	•The Biodiversity Gain Requirements (irreplaceable habitat) regulations 2024 •The Biodiversity Gain Requirements (Exemptions) Regulations •The Environmental (Local Nature Recovery Strategies) procedure regulations 2023 •Schedule 7A (Biodiversity Gain in England) Town and Country Planning Act 1990 •England Peat Map •IUCN UK Peatland Programme •Making Space for Nature white paper (Laughton report) 2009 •Natural England's Landscape Character mapping tool All England Strategic Landscape Mapping Hub	The following plans and programmes have been added to the appendix of the SEA scoping report of the biodiversity gain requirements (irreplaceable habitat), the biodiversity gain requirements (exemption) regulations, the environmental (local nature recovery strategies) procedure regulations, Schedule 7A town and country planning act, the IUCN peatland programme, making space for nature (note 2010 report not 2009), national policy

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		•Natural England's Landscape and Seascape character assessment guidance •National Policy Statement for water resource infrastructure April 2023 •UK Civil nuclear roadmap to 2050	statement for water resource infrastructure and the civil nuclear roadmap. The England Peat map has been reviewed for data to be included in the SEA ER along with the Natural England's Landscape character mapping tool of the All-England strategic landscape mapping hub.
20	Natural England-SSEP response	Chapter 27 (SEA Framework): We welcome the inclusion of Irreplaceable Habitats (Eng). However, this is terrestrially focused, and we would also welcome the inclusion of Marine Irreplaceable habitats. As previously advised, Natural England has published Defining Irreplaceable Marine Habitats - NECR474, and we have a follow-on project to map Marine Irreplaceable Habitats which is due to be published this year. A working draft definition of MIH is 'that which cannot be recreated or compensated for, and the only mitigation measure is spatial avoidance'. While this work is still to be completed, and we recognise that this is not government policy and that there is an ongoing conversation about how this work can be reflected in decision making, we would welcome consideration of the incorporation of MIH as a hard constraint into future iterations of the SEA. The avoidance of these habitats will reduce the requirement for any compensation, which can be time-consuming and costly, and therefore speed up development. As referred to in our previous SSEP consultation, we will share the data layers for MIH as soon as we are able.	This data was unavailable in time for inclusion within the SEA ER and this has been noted in the data gap section.

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21	Natural England-SSEP response	Appendix: Reducing marine noise (GOV-UK), Marine environment: unexploded ordnance clearance Joint Position Statement (GOV-UK), Supporting minimising environmental impacts from unexploded ordnance clearance (GOV-UK), JNCC guidelines for minimising the risk of injury to marine mammals from unexploded ordnance (UXO) clearance in the marine environment (JNCC Resource Hub), JNCC, Natural England and Cefas position on the use of quieter piling methods and noise abatement systems when installing offshore wind turbine foundations (JNCC Resource Hub), and Evidence on the efficacy of underwater noise abatement.	These additional policy and position statements have been added to the appendix of the SEA scoping report. Relevant information on mitigation measures has also been included in the SEA ER.
22	Natural England-SSEP response	Appendix: POSEIDON will finish in Sept 2025 and the data layers and risk layers should be considered in the final SEA. Developing future projects within MPAs designated for benthic features is highly likely to lead to adverse impact on site integrity and to require compensation. SACs in the North Sea especially Dogger Bank, but also North Norfolk Sandbanks, Haisborough Hammond and Winterton and other sites are considered to be at or beyond carrying capacity for development. The process to find and deliver compensation is complex and focuses limited resources on avoiding deterioration rather than recovering nature. We would therefore welcome an early commitment to avoid siting arrays within MPAs. We expect that POSEIDON will play an important role in refining Areas of Search so that key environmental risks are avoided as much as possible.	This data was unavailable in time for inclusion within the SEA ER and this has been noted in the data gap section.
23	Natural England-HND response	Q1: Additional Plans and Programmes to be added-Clean Power 2030, Reducing marine noise - GOV.UK. Marine environment: unexploded ordnance clearance Joint Position Statement - GOV.UK Supporting minimising environmental impacts from unexploded ordnance clearance - GOV.UK JNCC guidelines for minimising the risk of injury to marine	These additional policy and position statements have been added to the appendix of the SEA scoping report. Relevant information on mitigation measures has also been included in the

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		mammals from unexploded ordnance (UXO) clearance in the marine environment | JNCC Resource Hub, JNCC, Natural England and Cefas position on the use of quieter piling methods and noise abatement systems when installing offshore wind turbine foundations | JNCC Resource Hub, Evidence on the efficacy of underwater noise abatement The Biodiversity Gain Requirements (irreplaceable habitat) regulations 2024 The Biodiversity Gain Requirements (Exemptions) Regulations The Environmental (Local Nature Recovery Strategies) procedure regulations 2023 Schedule 7A (Biodiversity Gain in England) Town and Country Planning Act 1990 England Peat Map Making Space for Nature white paper (Laughton report) 2009 Natural England's Landscape Character mapping tool, Natural England's Landscape and Seascape character assessment guidance National Policy Statement for water resource infrastructure April 2023 UK Civil nuclear roadmap to 2050 All England Strategic Landscape Mapping Hub	SEA ER. The following plans and programmes have been added to the appendix of the SEA scoping report of the clean power 2030 plan, biodiversity gain requirements (irreplaceable habitat), the biodiversity gain requirements (exemption) regulations, the environmental (local nature recovery strategies) procedure regulations, Schedule 7A town and country planning act, the IUCN peatland programme, making space for nature (note 2010 report not 2009), national policy statement for water resource infrastructure and the civil nuclear roadmap. The England Peat map has been reviewed for data to be included in the SEA ER along with the Natural England's Landscape character mapping tool of the All-England strategic landscape mapping hub.
24	Natural England-HND response	Q2-Pre-construction, construction and decommissioning are all considered together. Although there will be similar pressures there are different considerations, so maybe separate out decommissioning in a separate column. It is unclear whether there will be consideration of cost included for end of life and decommissioning, i.e. Full life cycle. This was one of the lessons learnt from oil and gas in designing for decommissioning of offshore wind Guidelines 2024 OGUK_Guidelines We would like full life cycle consideration from cradle to grave. Including	Construction and decommissioning effects are considered to be similar. Text on additional habitat loss during decommissioning process has been added to SEA ER, if decommissioning is full removal which can then lead to double damage to habitats and species. Decommissioning will result in short,

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		removal at end of life and adherence to reduce, reuse, recycle hierarchy at end of life.	medium, long-term if full removal occurs for habitats to restore and recovery
25	Natural England-HND response	Q3-Section 3.2 sets out the scoping of the SEA topics. NE agree that all potential environmental issues for the Biodiversity, Flora and Fauna topic have been scoped in. However, we advise that additional issues are included for the decommissioning phase in relation to impacts/pressures on habitats and removal of infrastructure at end of life. As well as greater significance of physical processes.	The SEA ER has been amended to consider key issues for BFF from decommissioning impacts, for physical processes of sediment if full decommissioning removal occurs then any impacts are likely short-term
26	Natural England-HND response	Q3- Sediment processes/Physical processes will be considered in an EIA, but there should be some consideration for the SEA. Natural England would welcome consideration of coastal process and sediment process, current research project (UKRI/NERC eSWEETS project (Enabling Sustainable Wind Energy Expansion in Seasonally Stratified Seas)) may provide useful information. Natural England have advised for OWF Round 5 that areas of up welling and biodiversity are avoided.	It should be noted that sediment processes are not an SEA topic but are considered under Water and GSL, additional documentation on upwelling and biodiversity has been reviewed, however as stated previously this relates to substructures associated with wind farm foundations rather than submarine cabling and is beyond the scope of this SEA ER focused on cabling
27	Natural England-HND response	Q3-Protected landscapes and landscape character have different definitions and are covered by different policy, plans and programmes e.g. the duty set out in the Levelling Up and Regeneration Act (LURA) in relation to protected landscapes does not relate to landscape character. We advise that separating protected landscapes from landscape character would provide a greater level of clarity for the SEA. There is a duty under LURA (and similar in Welsh/Scottish legislation) to further the statutory purposes of protected landscapes; in our view the questions within the SEA should reflect this aim. In order to fully understand the landscape character within a zone, we advise that it would be useful to	The SEA ER has included information on landscape character areas within interfaces and any areas of designations e.g. AONB with additional text on the LURA added to the summary section on pressures for landscape and visual amenity.

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		identify the landscape character types using the NE Landscape Character Areas mapping tool.	
28	Natural England-HND response	Q3-Large parts of England are affected by water scarcity issues, and over-abstraction can impact on habitat condition. We advise further consideration of water availability in the SEA, e.g. using water resource management plan (WRMP) data to highlight zones where new water supplies may be constrained.	Text has been added to the mitigation section of SEA ER regarding having an awareness of water resources during construction process.
29	Natural England-HND response	Q4-It is noted that permanent loss of habitat features within designated sites is not stated in Appendix I under example of effects for the negative effects scoring, it refers to direct/long-term disturbance or damage and not loss. NE advise that the impact of permanent habitat loss is recognised and represented within the scoring criteria.	SEA scoping document scoring has been updated
30	Natural England-HND response	Q4-We consider that landscape character and visual amenity should have their own section. It would be useful to include a definition and an objective to both protect and enhance landscape and visual amenity. The government defines landscape character as 'the distinct and recognisable pattern of elements that occur consistently in a particular type of landscape, making one landscape different from another, and contributing to a sense of place'.	The SEA ER includes text on the likely impacts on specific features are at a project level e.g., viewpoints etc. With designated sites there is a greater likelihood for significant effects on landscape with development, definition for visual amenity has been added for clarity.
31	Natural England-HND response	Q5-NE welcome the inclusion of the condition status of designated features within the report. Reference to NE's Advice on Operations set out on the Designated Sites View and JNCC's PADs should be referenced to broaden the understanding of pressures on specific habitats. Furthermore, we would welcome inclusion of NE's offshore wind best practice and NE and JNCC joint cables best practice, which are live	Document on Nature considerations and environmental best practice for subsea cables in English inshore and UK offshore waters has already been included at SEA scoping stage. Document for advice note on effects of HPAI has been reviewed. NRW cabling advice has also been

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		documents and updated periodically. NRW have also recently published marine cable guidance which should be referenced.	reviewed and included where appropriate.
32	Natural England-HND response	Q6-We welcome the inclusion of Irreplaceable Habitats (Eng). However, this is terrestrially focused, and we would also welcome the inclusion of Marine Irreplaceable habitats (MIH). As previously advised, Natural England has published Defining Irreplaceable Marine Habitats - NECR474, and we have a follow-on project to map Marine Irreplaceable Habitats which is due to be published this year. A working draft definition of MIH is 'that which cannot be recreated or compensated for, and the only mitigation measure is spatial avoidance'. While this work is still to be completed, and we recognise that this is not government policy and that there is an ongoing conversation about how this work can be reflected in decision making, we would welcome consideration of the incorporation of MIH as a hard constraint into future iterations of the SEA. The avoidance of these habitats will reduce the requirement for any compensation, which can be time consuming and costly, and therefore speed up development. As referred to in our previous SSEP consultation, we will share the data layers for MIH as soon as we are able.	This data was unavailable in time for inclusion within the SEA ER and this has been noted in the data gap section.
33	Natural England-HND response	Q6- We would welcome consideration and mapping of desalination plants. Sizewell C has required its own desalination plant due to water shortages in the area during construction.	Information on desalination plants has been reviewed and included in the SEA ER, noting that areas of temporary desalination plants may also be present.
34	Natural England-HND response	Q7-NE advise inclusion of adhering to the avoid, reduce, mitigate hierarchy in relation to designated sites and avoiding long-term/permanent habitat loss within MPAs. NE in the main agree to the approach to the assessment, as a retrospective assessment of spatial plans. However, it is not clear whether amendments to the original HND	The SEA ER has highlighted that the BRAG ranking and assessments to determine routes have used avoid as main mitigation measure. Can only be avoided at this stage due to being at a plan level, likely further avoidance, reduce or

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		and HNDFUE designs through the Impact Assessment process has been considered within the SEA.	mitigation is within project level, which may then include design updates.
35	Natural England-HND response	Q8-NE advise that the mitigation hierarchy is incorporated into the objective for the biodiversity: Avoid, Reduce and Mitigate. So, where avoidance is not possible there is a commitment to reduce impacts. This is currently not considered within the objective. NE welcome the targets to avoid areas of known importance for flora and fauna. Indicators should also include Marine Irreplaceable Habitats (please refer to Q.6 response).	The SEA ER text now includes information on the mitigation hierarchy, however at a plan level avoidance has been main strategy as degree of other mitigation will depend on the specific area and associated impacts. The use of Marine Irreplaceable Habitats as an indicator will be dependent on this data being available for use, it has not become available in time, and this has been noted in the data gap section.
36	Natural England-HND response	Q8-For the Water topic we would also welcome reference to shellfish waters as an indicator.	No action needed.
37	Natural England-HND response	Q8-For climatic factors, an indicator could be early consideration of EA Flood risk zones.	Additional text has been added to the SEA ER on surface water flooding and information on coastal flooding is already included, the data has already been considered technically under the SEA Water topic.
38	Natural England-HND response	Q9-JNCC should be a statutory consultee for the SEA. NE welcome the annual review of the SEA to ensure that emerging policies and other spatial planning work streams are used to update the SEA annually. In addition, any approved design changes through the Impact Assessment process can also be captured regularly to ensure the baseline remains current.	JNCC has been included by NESO for all consultations (and will continue to do so) with all consultee responses carrying equal weighting

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39	Natural England-HND response	Natural England have recently responded to the SEA Scoping consultation for the SSEP. We advise that advice provided within the response letter is also considered for this HND/HNDFUE SEA consultation, where appropriate.	No action needed
40	Natural England-HND response	The SEA for the HND, HNDFUE ScotWind, HNDFUE Celtic Sea and INTOG has been developed retrospectively, and as noted on p252 alternatives were considered prior to the undertaking of the SEA. However, it is unclear how the outcomes from the Impact Assessment process have been considered as part of the SEA. (LIST) We advise that future Impact Assessments be judged against this SEA.	Within the SEA ER, the existing HND, HNDFUE Celtic Seas, ScotWind and INTOG will be undergoing a light SEA to be subject to same topics for assessment, with Recommended Designs coming through for full SEA with impact assessments.
41	Natural England-HND response	Appendix D-NE disagree with the BRAG rating for fish spawning grounds and fish nursery grounds. The table represents these themes as Green; however, these should be Amber as a minimum. In addition, areas essential for important forage fish species (species such as sand eel and herring) are most important from an environmental perspective, as disrupting these species will have a disproportionate impact on marine food webs and other species. Some fish species are Annex II species and require greater consideration under legislation.	Routing appraisal will avoid amber and red areas, however due to large encompassing areas of breeding/spawning areas, cannot be used to differentiate routes, however, will be noted in SEA process/appraisal, individual cable trench width is small relative to areas for breeding/spawning.
42	Natural England-HND response	Compensation Sites/Designated sites identified as Adverse Effect on Integrity Compensation sites, those areas identified to compensate for AEOI on designated sites, which will have the same protection status as MPAs. Although early days, as currently no known sites identified, compensation sites must be kept in mind for when the SEA is updated, to prevent any development in sites secured as compensation. There also needs to be consideration for sites where SoS has already determined that there will be an AEOI on a designated site feature. Any additional projects with impact pathways that impact upon that same site feature is also likely to	This comment has been passed along to AECOM for review and inclusion if appropriate

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		have an in combination AEOI. Therefore, suggest that the inclusion of spatial areas will help inform sustainable development for the right projects in the right places	
43	Natural England-HND response	Benthic MPAs Noting the updated conservation advice for the following benthic MPAs: • The Wash and North Norfolk Coast SAC and the Inner Dowsing, Race Bank and North Ridge SAC • Haisborough, Hammond and Winterton SAC • Cromer Shoal Chalk Beds MCZ The conservation advice packages for these benthic sites conclude Adverse Effect on Integrity (AEOI) for any external cable protection. This is likely to have implications for any cable corridors intersecting these sites and present consenting risks.) For the HNDFUE we advised that the BRAG score should be Black for Cromer Shoal Chalk Bed MCZ as it should be avoided. As with Cromer Shoal Chalk Bed MCZ, Haisborough, Hammond and Winterton SAC presents environmental constraints and has a restore conservation objective, so should also be avoided. Current projects which have installed cables for offshore windfarms within Cromer Shoal Chalk Bed MCZ and Haisborough, Hammond and Winterton SAC have required MEEB and compensation, respectively. As such these sites were avoided for the HNDFUE and should be recognised within the SEA.	These were reviewed to confirm if areas are being avoided by route corridor: HND route R4_3 to Weston Marsh passes through the Inner Dowsing, Race Bank and North Ridge SAC. HND R4_3 to Weston Marsh and HNDFUE SW_E1c_2 to Weston Marsh intersects the Wash & North Norfolk Coast SAC onshore, however this can be avoided. BRAG given as red not black.
44	Natural England-HND response	Annex I habitats outside of designated sites/Environmental Opportunities Table 10 (pg 83) list all Annex I habitats and the number of SACs in which these habitats are present. However, it is not clear how Annex I habitats are considered when outside of designated sites. It is the duty of a public body to deliver their functions in a way that secures the aim of the Habitats Directive, which includes maintaining or restoring to Favourable Conservation Status Annex I habitats across their range, irrespective of	Text has been amended beside table 3-5 in SEA ER to state that Annex 1 habitats outside of any designated sites have been considered within the assessment process through the BRAG ranking of data and avoidance where possible. Reference to net gain requirements and

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		whether they're within a site or not. The SEA should not only avoid environmental risk but also consider and build in environmental opportunities including biodiversity net gain (including marine net gain), nature recovery and natural capital. To deliver the best environmental outcomes into the future, adverse impacts should be avoided on areas where there is potential for environmental restoration and nature recovery. The Environment Act (2022) introduced mandatory Biodiversity Net Gain (BNG) around the onshore/intertidal elements of projects including all Nationally Significant Infrastructure Projects. This became mandatory for all TCPA development in November 2023 and should become mandatory for NSIPs in 2025. There are public authority duties already in place (Biodiversity duty: public authority duty to have regard to conserving biodiversity - GOV.UK (www.gov.uk)) to conserve biodiversity.	compensatory measures has been included in the mitigation.
45	Historic England	Q1-Legislation to add: •Burials Act 1857 https://www.legislation.gov.uk/ukpga/Vict/20-21/81/contents •The Crown Estate Act 2025; and •Great British Energy Act 2025	These plans have been added to the appendix of the SEA scoping report
46	Historic England	Q3-It is unfortunate to see in the bullet points under section 2.2 (Background to Holistic Network Design) an interpretation of 'environmental impact' which only appears to focus on the 'natural'. Furthermore, in section 3.1.2 (Assessment of outcomes and identification of preferred options) the text still places impacts upon heritage under 'community constraints' rather than 'environmental constraints. We agreed previously that heritage should be included within 'environmental constraints', otherwise this can lead to a false belief that impacts upon the significance of nationally or internationally important heritage assets being offset/compensated by other local community benefits. This thereby fails to address impacts proportionately or allow for proper engagement with the national/international community of interest and	From previous discussion due to large amount of data considered in the environmental constraints; by considering heritage under community constraints, it allows these heritage constraints to be fully considered. Under the SEA assessment, heritage is considered under its own assessment

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		policy/state/state part commitments in respect of the significance of the assets.	
47	Historic England	Q3-Section 3.2 Scoping table 4 – we welcome that Cultural Heritage is scoped in. However, the Potential environmental issues are incomplete. Terrestrial archaeological features/monuments should also be identified as 'designated and non-designated'. Effects on marine and terrestrial remains may continue post construction where decay or erosion processes have been altered by the works. Designed landscapes should be mentioned with architectural heritage (designated and non-designated).	Text on potential for long-term impacts due to decay or erosion, terrestrial archaeology and landscape architectural features has been added to the SEA scoping report
48	Historic England	Q4-Consideration should be given both onshore and offshore to the impact of congestion on design options, i.e. as more connections try to take the same route or entry point assets avoided in the first schemes could be affected by subsequent schemes (an effect likely to be further increased by the separation distances required between conductors). This effect may ultimately be unavoidable, but it needs to be brought into the weighting that constricted points of entry and routes may become progressively more impactful as they saturate the same space. It could therefore be the case that mitigation 'costs' should be spread between all schemes at these points rather than fully laden onto the last project in.	SEA is being undertaken on HND (covering HND, HNDFUE Celtic Sea, HNDFUE ScotWind and INTOG) with assessment on in-combination and cumulative effects and considers temporal nature of developments.
49	Historic England	Q5-Table 5 and Section 4.3 (Environmental characteristics) contain a wide range of cultural heritage baseline data sources which includes designated and non-designated heritage assets (e.g. 'known wrecks' and 'submerged archaeology'). The question of scale is very important in consideration that scale factors will be different in the terrestrial and marine areas. For example, areas of historic importance may occur at a landscape scale whereas in the sea a heritage asset (wreck of vessel or	No action needed

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		aircraft) could be of limited spatial extent. However, in consideration of the focus on offshore cabling, associated onshore cabling, converter stations and developer substations it is possible that route or location flexibility could be limited when evaluating options.	
50	Historic England	Q6-Section 4.3.8 (Cultural heritage) we welcome the importance and relevance of this section in highlighting the presence of submerged landscapes that hold intrinsic archaeological importance. We add that the key issues associated with the implementation of the draft HND Implementation Plan should also recognise that terrestrial archaeological features/monuments should also be noted as 'designated and non-designated' and that effects on marine and terrestrial archaeology may continue post construction where decay or erosion processes have been altered by the development.	Text on terrestrial archaeology features and potential for long-term impacts due to decay or erosion has been added to the SEA scoping report
51	Historic England	Q6-We also offer relevant additional information which should have been included in section 4.3.8.1 (Onshore designated sites and Important Historic Sites) i.e. information from the online system for reporting investigations into the historic environment (https://oasis.ac.uk/). Table 5 (Baseline sources and data) should include outputs from England's Rapid Coastal Zone Assessments programme, see: Review of the Rapid Coastal Zone Assessment Survey (RCZAS) Programme | Historic England Archives: Rapid Coastal Zone Assessment Surveys: Introduction; and Results for "rapid coastal" - data.gov.uk	Complete datasets were not available to download for use in the SEA ER
52	Historic England	Q6-In section 4.3.8.2 (Offshore designated sites and Important Historic Sites) we noted the reference to how historic wreck sites can have archaeological interest, as acknowledged within the UK Marine Policy Statement (see paragraph 2.6.6.5) and implemented through English Inshore and Offshore Marine Plans.	No action needed

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53	Historic England	Q7-The explanation provided in Section 5.1 (Approach to SEA assessment of effects of preferred options) explains how a scoring system is used (Table 27) and application in a temporal dimension of short, medium and long-term (section 3.1.4). However, in reference to the historic environment, care is needed in how this can be applied. For example, archaeological resources cannot recover when negatively impacted therefore such harm should be considered long-term. We appreciate the attention given in Appendix D (Environmental data considered in route and options appraisal) and the inclusion of cultural heritage e.g. World Heritage Sites, listed buildings, scheduled monuments and "wreck locations" (i.e. non-designated).	No action needed
54	Historic England	Q8-We agree with the objectives for "cultural, architectural and archaeological heritage" (Table 28) and we would like to see recognition of the collaborative opportunities to maximise survey campaigns so that data generated delivers multiple benefits and thereby expands knowledge and understanding about our shared historic environment. This is a factor that has previously been recognised in SEAs conducted for offshore energy through applying the principle that accumulating professionally produced data and reports should inform future development-led investigations and thereby aid the decision-making processes. We further suggest that this is a factor which could be added to Section 5.4 (Monitoring) as a mechanism to show positive effects. Appendix I (Draft SEA scoring guidelines) the examples used focuses on negative/positive effects on designated heritage assets; this will need to be expanded to encompass non-designated as included in the SEA objectives.	Text to recognise potential for collaboration has been included in Section 5.4 but note this has been worded generically for all SEA topics potentially undergoing monitoring campaigns. Text on non-designated sites has been added to Appendix I for SEA scoring guidelines.
55	Historic England	Q9-We are aware of the considerable attention being given to simultaneous strategic planning mechanisms for energy generation and	No action needed

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		transmission. We therefore request that consultation is planned as efficiently as possible so that our advice can feed into interrelated strategic planning initiatives inclusive of the Strategic Spatial Energy Plan and the Centralised Strategic Network Plan and their accompanying SEA exercises.	
56	Historic England	Section 3.2 (Scoping of Strategic Environmental Assessment topics) we agree with the inclusion of the topics under "cultural heritage" within Table 4 (Scoping of SEA issues) although it is important to recognise that negative effects on the historic environment could continue beyond construction and into 'operations and maintenance' phase (20 years plus).	Text referring to long-term impacts has been added to Table 4 within the SEA Scoping report
57	Historic England	We recommend that further attention in any SEA environmental report subsequently produced should look to identify any positive (or beneficial) outputs from successfully completed environmental assessment exercises. For example, production of new information about the historic environment and availability through national and local archival facilities. Section 4.3.8.3 focusses on submerged landscapes and we welcome the attention given to academic research projects to which we add 'Taken at the Flood' (see UK Research and Innovation webpage: https://gtr.ukri.org/projects?ref=AH%2FW003287%2F1). A particular aspect of this project is to maximise re-use of industry gathered marine survey data at key locations of geoarchaeological interest in the southern North Sea. It is also important to highlight the onshore/offshore continuity of prehistoric landscapes and features such as river channels, such as occur along sections of the English coastline (e.g. East Anglia) that are internationally recognised for geoarchaeology and palaeo-environmental research (https://www.britishmuseum.org/research/projects/first-pioneers-	Text to recognise potential for collaboration has been included in Section 5.4 but note this has been worded generically for all SEA topics potentially undergoing monitoring campaigns. To note information on the importance of continuity for onshore and offshore landscapes has been added to Section 4.3.8.3 in the SEA Scoping Report

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		northern-europe), but which are also locations frequently used for electricity export cable landfall, as illustrated in Figure 21. Historic England therefore has long stood, positive working relations with other seabed users and developers through our advice on interaction with the historic environment at all stages of project preparation and delivery. We also lead on a project supported by The Crown Estate 'Offshore Wind Evidence and Change Programme' (see: https://www.marinedataexchange.co.uk/content/info/offshore-wind-evidence-and-change-programme) to enhance access and use of development-led data and information.	
58	Marine Management Organisation	Q1-The references to marine plans in England on p20 and p405 need to be corrected. There are 11 marine plan areas which are covered by 6 marine plans (the North East, East, South East, South, South West and North West Marine Plans – please refer to the Explore Marine Plans portal for further information). The lists of marine plans on both p20 and p405 are not correct (for example p405 mentions a 'North Marine Plan' which does not exist). It is also worth noting that the South East Marine Plan is only an inshore plan and does not have an offshore plan.	References to marine plans have been updated in SEA scoping report
59	Marine Management Organisation	Please also note that the East Marine Plan is currently being replaced. We are currently in the Options stage of plan replacement and aim for the plan to be published in 2027, although this timeline is subject to change and should not be shared widely. The new plan may provide an opportunity to support the implementation of the HND, and projects delivered under the HND will have to account for the new plan once it is in place. The replacement of the plan should be referenced in the review of plans, policy and programmes (p14).	Plan was unavailable in time for inclusion within SEA ER, as anticipated for 2027

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60	Marine Management Organisation	Q1-The Clean Maritime Plan/Maritime 2050 Strategy is not included in the key plans and programmes listed. As these plans are relevant to the British maritime sector out to 2050, we would expect them to be considered.	The Clean Maritime Plan has been added to the appendix of the SEA scoping report
61	Marine Management Organisation	Q2-For the temporal scope of the assessment, long-term impact is stated as being assessed 5 years post-construction onwards. Is there a set timeframe for the assessment of long-term impacts e.g. on benthic habitats or elasmobranchs? There is also a reference to assessment of decommissioning impacts in the temporal scope, what sort of timeline are these impacts being assessed on?	Temporal periods referred to in assessment relate to time period being indicated and are not specific to species or habitats, it relates to cable activity as assumed post-5 years maximum recovery amount will have occurred. Decommissioning activities are considered as reverse of construction if removal of cable occurs may be a double habitat loss, RPS has updated text following research on leaving cables in-situ with current emergence of circular economy for removal of cables either to repurpose or to salvage raw materials. Generally deep ocean cable removal has lower environmental impacts compared to removal in shallow areas from BFF perspective.
62	Marine Management Organisation	Q4-Impacts on fisheries are mentioned twice under 'population and human health' however this is not expanded on any further in the following sections and no data is proposed to support the assessment of these impacts. Impacts on fisheries is also mentioned under the 'material assets' category and this is explained well, with data to support the assessment. Further clarification on the different impacts on fisheries	No action needed

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		(how these are categorised, and how impacts will be assessed) would be welcome.	
63	Marine Management Organisation	Q5-As best practice, we would encourage the SEA to work from (at least) the same evidence base as that which informed the development of the HND. We would also encourage NESO to align the evidence base used for the SSEP and the HND processes. This supports a consistent assessment across all strategic planning exercises and ensures that all relevant datasets are used in the assessment. Noting that there have been a number of similar requests from NESO to advise on data sources in recent months, and the resource constraints on consultees (including the MMO), it is possible that some datasets have been 'missed' from some responses. There is therefore a risk that similar workstreams will be working from differing or conflicting evidence bases, if no work is undertaken to compare and align datasets across workstreams.	No action needed
64	Marine Management Organisation	Q6-As noted in our response to the previous question we would encourage NESO to refer to the outcomes of previous data calls and the advice provided therein. From an MMO perspective we would particularly like to highlight the following – Fisheries data (p201 onwards). We have previously advised NESO on appropriate data to represent fishing activity. We are currently working with NESO and the Defra group to agree how fishing activity will be represented in the SSEP. We recommend that the same data sources are used for the HND SEA (with the option to focus on different fishing gears, to account for different interactions between OW arrays and cables).	No action needed
65	Marine Management Organisation	Q6-Please include 'National Parks' under designated landscapes in the initial table which outlines the data being taken into consideration. 'Country Parks' are listed but they are not a designated feature, it is	Both designated and non-designated landscape features are considered within the assessment, National Parks

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		important to understand potential landscape and seascape impacts on any national parks.	has been included in the initial data table in the SEA scoping report.
66	Marine Management Organisation	We are keen to understand if the outputs of the POSEIDON project have been considered for use in the biodiversity evidence base. POSEIDON is a multi-year, multi-stakeholder project to create a comprehensive marine environmental baseline. The project has collected significant amounts of new survey data and is currently developing species and habitat models for UK seas. Natural England are leading the project and outputs are expected soon, we recommend speaking to NE to get more information.	This data was unavailable in time for inclusion within the SEA ER and this has been noted in the data gap section.
67	Marine Management Organisation	We would like to understand why a staged approach to assessment has been proposed (fig 35). We suggest that to assess the cumulative impacts of the whole plan, the plan should be assessed as a whole rather than phase by phase. In particular, where infrastructure is going to be delivered in the same location, then these should be part of the same assessment.	As part of the appraisal of each of the Recommended Designs of the HND Implementation Plan, the SEA will assess the potential for cumulative effects for each SEA topic. In addition, the SEA will identify the potential for cumulative effects of the plan in its entirety, including in-combination effects of elements within the plan itself, and potential effects with other relevant plans or projects.
68	Marine Management Organisation	We would also like to understand more about how the SEA assessment is intended to support the development of the HND implementation plan (p3). Based on the information provided in this scoping report we are not clear how the outcomes of the assessment will feed into the implementation of the HND. For example, if the SEA identifies significant impacts, will the HND be revisited so that these impacts can be reduced or mitigated?	Recommended Designs and previous work have fed into current position with environmental and social indicators considered alongside technical deliverability and economics which considered SEA criteria. Informed via Appendices within SEA assessment of

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			various routes having undergone light touch SEA assessments.
69	Marine Management Organisation	Further, the only alternative to the HND plan being assessed is the 'do nothing' scenario where wind farms connect to the grid on a first-come, first-served basis. How will this scenario be assessed, given the hypothetical nature (no identified cable routes or landing points to assess)?	All scenarios have been assessed under a light touch SEA, not a full SEA due to time constraints on volume of considered options. Short-listed assessments are only present for brevity within the SEA ER.
70	Marine Management Organisation	Q9-While JNCC are not technically a statutory consultee, given how much of the plan is within the offshore area we would hope that their comments carry a similar weight as that of Natural England with respect to the environmental features of protected areas.	No action needed
71	Marine Management Organisation	Some of the language used in the report is confusing. One example of this relates to how the SEA will assess the HND options, this could be read as saying that the SEA will assess different options for cable routes. In fact, the SEA will only assess one set of routes (those shown on figure 5), which are the preferred options from the HND analysis. We suggest that now that a preferred option has been chosen from the HND programme, and no other options are being explored, this is referred to in the SEA as 'the plan'.	The language used in the SEA Environmental Report will be reviewed to ensure clarity. As part of the SEA process, a SEA light assessment is being undertaken for all route corridors that were considered during the development of the plan. The route corridors that form part of the Recommended Design for the plan will then be assessed by the SEA to a greater level of detail and using all available datasets of relevance.
72	Marine Management Organisation	P211 - please note the MMO do not grant marine licences in Welsh waters. This is the remit of Natural Resources Wales (regulatory arm).	SEA scoping report text amended.

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73	Marine Management Organisation	P538- We note the mention of Cable Protection Zones as a mitigation measure to restrict fishing activities over cables. In the UK there is no legal restriction on fishing over cables, and we are not aware of any regulations which could be used to create a permanent exclusion zone around a cable.	No action needed
74	Scottish Government, Sectoral Marine Planning	Q1-At the national level under 'Sustainable Development and Energy' we note that the Environmental Assessment (Scotland) Act 2005 isn't referenced. It appears the 2004 UK Regulations might be incorrectly referenced as Scottish legislation. For Scottish marine planning, the National Marine Plan 2 Planning Position Statement might also be relevant. We note the Sectoral Marine Plan for Offshore Wind Energy (2020) has been included. The Draft Updated Sectoral Marine Plan for Offshore Wind Energy has now been published for consultation and would be relevant for inclusion here. The ScotWind and INTOG leasing rounds were undertaken by Crown Estate Scotland – this has been incorrectly identified as The Crown Estate for ScotWind. A new Scottish Programme for Government has been published: Programme for Government 2025 to 2026 - gov. scot The Scottish Government's Blue Economy Vision could also be reviewed for relevance.	The Environmental Assessment (Scotland) Act 2005 has been referred to in the background section for the SEA. It has also been added to the plans and programmes as well as the National marine plan 2, the draft updated Sectoral marine plan for offshore wind energy, reference to The Crown Estate for ScotWind has been amended in the scoping report. The Blue Economy Vision and the new Scottish programme for government have been included in the appendix of the SEA scoping report.
75	Scottish Government, Sectoral Marine Planning	Q2-We note the coordination and lack of overlap with the Scottish Sectoral Marine Plan for Offshore Wind Energy elements and agree with this aligned approach. The consideration of all phases of project lifecycles (i.e., construction, operation and decommissioning) aligns with the approach taken for the draft updated SMP-OWE in Scotland.	No action needed

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76	Scottish Government, Sectoral Marine Planning	Q3-We have no concerns with the scoping approach. For awareness, the topics scoped into the SEA for the updated SMP-OWE are as follows: • Biodiversity, Flora, and Fauna; • Population and Human Health; • Soil (namely, Marine Geology and Physical Processes); • Water Quality; • Climatic Factors; • Cultural Heritage; • Landscape, Seascape and Visual Amenity; and • Material Assets (relevant issues have been assessed under corresponding SEA topics above).	No action needed
77	Scottish Government, Sectoral Marine Planning	Q4- For awareness and reference (if needed), the key environmental issues related to the draft updated SMP-OWE have been set out in our SEA Environmental Report.	No action needed
78	Scottish Government, Sectoral Marine Planning	Q5-For awareness and reference (if needed), the Regional Locational Guidance for the draft updated SMP-OWE sets out the baseline used for our planning and assessment processes. Overall, it might be helpful to make it more clear what data sources have inputted into the maps presented as part of the baseline section.	Data sources have been reviewed for information provided on these figures presented in environmental baseline for the SEA, no amendments made
79	Scottish Government, Sectoral Marine Planning	Q6-If useful, the Scottish NMPi tool displays a range of marine spatial data for Scotland. Scotland's Marine Assessment 2020 provides an assessment of the state of Scotland's seas and of the main activities and pressures in the various Scottish Marine Regions and Offshore Marine Regions. There are priority marine features designated in Scotland as well: Priority Marine Features - Marine environment - gov. scot	Data was reviewed for inclusion with SEA ER from Scottish NMPi with no additional data used.

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80	Scottish Government, Sectoral Marine Planning	Q7-We note the alignment of our pieces of work in terms of taking a high-level approach to assessment in keeping with the high-level scope of the implementation plan. We would like to highlight our willingness and desire to continue working closely with NESO to ensure continued alignment of our projects as the assessments progress.	No action needed
81	Scottish Government, Sectoral Marine Planning	Q8-The statutory consultees set out for Scotland align with our understanding of the legislation. We have no concerns with the proposed project timescales.	No action needed
82	Scottish Government, Sectoral Marine Planning	Overall, we would defer to the expertise of the Scottish Consultation Authorities to provide more detailed comments. We have undertaken a high-level review this SEA Scoping Report from the lens of Scottish marine planning for offshore wind.	No action needed
83	Scottish Government, Sectoral Marine Planning	A small note, I noticed the INTOG acronym was incorrect. Should read as 'Innovation and Targeted Oil and Gas'	Acronym updated in SEA scoping report
84	Crown Estate Scotland	Crown Estate Scotland has ten agreements related to tidal energy in Scottish Waters (NSTA, 2024). Marine leases exist for three operational sites at Inner Sound between Gills Bay and Island of Stroma, Bluemull Sound in the Shetland Isles, and Dunlossit between Islay and Jura. The EMEC in Orkney also run two test and demonstration sites for tidal energy devices at Fall of Warness and Sharpinsay Sound. There are option agreements for four projects in pre-planning at Oran na Mara between Islay and Jura, Yell Sound in the Shetland Isles, Westray South in Orkney and Duncansby Head off the coast of Caithness. Finally, there is a lease for a mooring at Deer Sound in Orkney which is used to moor tidal energy	Figure has been amended and area removed.

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		devices during maintenance activities. There are no tidal lagoon sites within GB waters. There are two active sites for wave projects in Scottish Waters, both are test and demonstration sites managed by EMEC in Orkney namely Billia Croo and Scapa Flow (note Deerness device is being decommissioned with lease expiring this year and no further activities planned here, it is shown on Figure 23 as a small dot and should be removed.	
85	NRW	Q1: Birds: There is a Welsh Seabird conservation strategy in development which should be concluded this year. This should be included when available	This comment has been passed along to AECOM for review and inclusion if appropriate, but it will be dependent on data becoming available
86	NRW	Q1: Marine Mammals: We agree with the information contained and way forward outlined in the draft HND implementation plan. In line with fish receptor comments, we advise that the NESO may wish to consider the inclusion of Well-being of Future Generations (Wales) Act 2015. Note that for section 1.7 Appropriate Assessment: HRA Screening, the NESO may wish to note NRW's positions on the use of management units in HRA (here).	This comment has been passed along to AECOM for review and inclusion if appropriate
87	NRW	Q1: Fish: The NESO may wish to consider the inclusion of the Well-being of Future Generations (Wales) Act 2015.	This has been included already in the SEA scoping report
88	NRW	Q1 Benthic: The UK marine strategy should be listed for biodiversity (it is only currently included for water).	The UK marine strategy for biodiversity is considered now under the 2025 UK Marine Strategy, the plan of the new NBSAP to 2030 has also been included
89	NRW	Q1: Flood Risk: Under the 'Water' theme of National/Regional Level suggest inclusion of a) 'Flood & Water Management Act 2010' (it is referenced on page 163) and b) 'Technical Advice Note 15 (TAN15): Development, flooding and coastal erosion' here which provides technical guidance to	These have been added to the appendix of the SEA scoping report

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		supplement. the policies set out in Planning Policy Wales and Future Wales in relation to flooding and coastal erosion.	
90	NRW	Q1: Air quality: Section 4.3.5.1 provides details about air quality in the UK and has listed legislation relating to air quality, however, the Environment (Air Quality and Soundscapes) (Wales) Act 2024 has not been listed, and this is relevant legislation in Wales Section 5.2.1 outlines how the preferred options will be assessed, there is a section here for air quality, however, no details are currently available, and the report states the outcomes of the assessment will be populated once finalised.	Environment (Air Quality and Soundscapes) (Wales) Act 2024 has already been included in the SEA scoping report. In relation to Section 5.2.1 the information at the SEA scoping report level provides an insight into how the assessment will be undertaken, no specific conclusions can be given at the scoping stage with this information supplied in the SEA ER.
91	NRW	Q2: Benthic: Geographic scope – the SEA scope includes a 15km buffer around the proposed plan areas / corridors. It should be mentioned that this is due to the need to include areas of seabed and water column within one tidal excursion (related to marine and coastal physical processes).	Additional text added in Section 3.1.3 of the SEA Scoping Report
92	NRW	Q2: Marine Mammals: With regard to the geographical scope, further clarification with regard to the purpose of the PDA and SEA study areas (and their respective buffers) should be given. Our current understanding is that the SEA will focus on assessing impacts within the SEA study area + the 15 km buffer. We agree with the temporal definitions, however, recommend that when assessing cumulative effects across the construction, operational, and decommissioning phases consideration should also be given to the total combined impact load introduced by all three phases.	No action needed

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93	NRW	Q3: Physical Processes: Yes (for physical processes), but we feel that is it unhelpful that some physical processes are covered under 'Geology, Soils and Land Use' and some under 'Water.' We suggest that it might be better to have a separate section for physical processes distinct but related to both of these.	No action needed
94	NRW	Q3: P. 85 Marine and Coastal priority habitats – Sabellaria spinulosa reefs are present in Wales (data available on request from NRW) but are currently showing as "No" for consideration in the document. Areas of S. spinulosa reefs in Wales are OSPAR habitats and should be afforded the same regard as other Section 7 habitats under the Environment (Wales) Act. Locations are mapped on DataMapWales Environment (Wales) Act Section 7 and OSPAR: Marine Habitats | DataMapWales. Several pressures scoped in for 'Water' should also be scoped in under 'Biodiversity, Flora and Fauna' e.g. accidental release of sediment-bound contaminants	Table has been amended to "Yes" under this reef type for Wales, data source for information noted. Information on potential impacts such as accidental sediment release is considered within the high-level impact's tables.
95	NRW	Q3: Benthic Biodiversity: indirect impacts within the wider zone of effect should also be scoped into the environmental assessment. The current document covers direct impacts, and indirect impacts during construction, but does not specifically mention a "Zone of Effect"; ongoing changes to physical processes (not just from scour) due to the placement of structures on the seabed can cause long-term and indirect alterations in seabed communities and ecosystem processes (this also needs to be addressed in Appendix H in the benthic impacts for offshore construction and operation – ongoing long-term changes to physical processes resulting from placement of structures / cable protection on the seabed may lead to indirect impacts on benthic habitats within a wider zone of effect that the immediate footprint of activity).	Additional text has been added to address indirect impacts within a zone of effect under Section 4.3.1. Additional text surrounding indirect effects added to Appendix H
96	NRW	Q3: Flood Risk: Yes, largely – environmental issues of flooding (development constraint and/or to cause pollution) and coastal erosion	Further text has been added to Section 4.3.4 Water in the SEA scoping report

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		(as a detrimental physical process) are alluded to in current content but could be made more explicit.	
97	NRW	Q4: Coastal ecology: Scoping SEA Issues P. 45 (P. 37) Biodiversity, flora and Fauna. Need to add: Indirect impact to benthic / coastal habitats* such as habitat loss or loss of dynamism etc., from changes in physical processes for all stages of the project not just construction.	Additional text has been added to address indirect impacts within a zone of effect under Section 4.3.1 in the SEA Scoping Report
98	NRW	Q4: Flood Risk: Yes, largely (for flood risk and coastal erosion). However, the source of property figures and locations at risk from coastal flooding should be quoted on page 163 and the title "Flood Risk Assessment Wales mapping" should be used. Latest published figures for properties at risk of flooding in Wales from the sea are in our Flood Risk Management Annual Report 2023/24 here in Tables 2 (present) and 5 (future) and for properties at risk from coastal erosion in Wales see our Section 18 report for 2020-23 here in Table 8.	Source figures quoted and locations at risk of flooding was taken from National Strategy for Flood and Coastal Erosion Risk Management as stated in initial paragraph and locations determined from map, however figures are now updated to latest Flood Risk Management Annual Report 2023-2024. Information on Flood Risk Assessment Wales mapping has been included.
99	NRW	Q4: Benthic: Yes, though it would be more helpful if those identified for Biodiversity could be split according to the various receptors. It is not very clear at present as all biodiversity receptors are lumped into a single category; we would expect specific pressures to be listed for each receptor. For benthic habitats, there is a standard list of pressures that should be used Marine Activities and Pressures Evidence | JNCC - Adviser to Government on Nature Conservation. The MarLIN MarESA database allows pressures to be assessed for biotopes and features (MarESA pressures and benchmarks - MarLIN - The Marine Life Information Network).	Text has been added to state that specific information on benthic habitats and receptors should be considered at the project level assessment, further information from the JNCC PAD database has been added to information on effects

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100	NRW	Q5: Birds: Data held by NRW have not been included. The Welsh marine mammal and seabird atlas is available here - Modelled Distributions and Abundance of Cetaceans and Seabirds of Wales and Surrounding Waters | DataMapWales. Poseidon, a project generally for offshore wind, will also produce outputs that could help. There are also various scientific papers that show areas where seabirds go from SPA colonies. This did not include the SMP which is the data base for all seabird colonies kept by BTO.	Noted. The SEA will consider available data that covers the study area.
101	NRW	Q5: Marine Mammals: Mostly. For marine mammal densities in Welsh waters, we recommend using Evans and Waggitt (2023) (often more commonly referred to as the "Welsh Marine Mammal Atlas"). The atlas contains modelled distribution maps of the key species based on 30 years of sightings data and environmental co-variates - thus avoiding the issues with shorter term "snapshot" surveys such as SCANS.	Noted, however, at the plan stage, data has been considered that covers the full study area, where available. This data will be noted for recommended consideration at the project level. The Waggitt et al, 2019 distributions for marine mammal and seabird species cover the study area and will be considered in the SEA appraisals.
102	NRW	Section 4.3.1.4 (page 104) makes reference to screening advice from SMRU and DAERA but does not refer to equivalent NRW screening advice (here). We recommend that this advice is included in the report and followed for assessments in Welsh waters.	Information on NRW screening advice has been added to Section 4.3.1.4 of the SEA scoping report
103	NRW	Physical Processes: One point, there is reference to "sediment characteristics and transport" from BGS data (p.46, Marine and Coastal Geology and Sediments). We're not aware of sediment transport maps from the BGS. We agree that sediment transport pathway data is needed, therefore can the source be clarified?	This refers to BGS seabed geology data: https://www.bgs.ac.uk/datasets/bgs-seabed-geology/ which has already been included in the SEA scoping report

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104	NRW	Coastal Ecology: We consider that Water Framework Directive (WFD) needs to be added – this can provide condition information for saltmarshes in some waterbodies.	No action needed
105	NRW	Coastal ecology: Environmental Baseline Data – Data Sources pg. 52 (pg. 44). There is a row for benthic and intertidal habitats, but no row for Coastal and terrestrial habitats, these need to be included (Coastal habitat descriptions: UK Terrestrial & Freshwater Habitat Types).	Coastal and terrestrial habitats are considered under row of location and condition of designated nature conservation sites and species e.g., SACs, SPAs, Ramsar sites, SSSI etc.
106	NRW	The most up-to-date maps for all Annex I habitats will be Reg 9A maps which will be published at the end of 2025 and will be uploaded to DataMap Wales.	This data was unavailable in time for inclusion within the SEA ER and this has been noted in the data gap section.
107	NRW	Environmental Baseline Data p. 53 (p. 45): Non-indigenous species: Include the Great Britain Invasive Non-Native Species Strategy: 2023 to 2030 » NNSS	This has been added as an additional plan/programme and also as a form of reporting for the environmental baseline data but note that this does not include specific data, however additional information has been included on this strategy under Section 4.3.1.6
108	NRW	Biodiversity pg. 75 (pg. 67). We consider that Article 17 paragraph is somewhat confusing (last paragraph on page) as it covers UK metrics but appears to be in the Wales section.	Each of the three countries are listed in turn under Article 17 (with this structure maintained in other sections of document) with overall summary provided at the end here on UK metrics, no amendments to text structure have been done.

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109	NRW	Feature condition of designated sites Pg. 80 (Pg. 88). Protected Sites Baseline Evaluation Review 2021. The SEA Scoping acknowledges that the dataset had insufficient evidence to determine the condition of around half of the qualifying features. Clarification is needed on the process for assessing site condition for sites falling within the construction envelope which have no condition data.	Text has been added to the SEA scoping report to referring to RIAA process which will fully assess all sites as required, SEA notes the appraisal methodology is objective based and will look at designated sites if within route and if data is available and will be per scoring guidance. This comment has been passed along to AECOM for review and inclusion if appropriate
110	NRW	4.3.1.1 Marine and coastal habitat pg. 88-89 (pg. 80-81). This section refers to substrate types rather than named habitat types. A definition of 'Coastal' is required as this is in the heading but not referred to in the text, which refers to marine and benthic, not coastal habitats as NRW would understand them	Title has been amended from Marine and Coastal to Marine and Benthic in SEA scoping report
111	NRW	4.3.1.7 Summary of existing pressures and issues for biodiversity flora and fauna. Pg. 122-123 (p.g. 114-115). This list is incomplete leaving out many of the major pressures for coastal habitats and confusing as it covers future pressures.	Text has been amended in the SEA ER to include additional information on pressures such as coastal squeeze, sea-level rise etc.
112	NRW	Benthic: For marine habitat information in Wales, we would encourage the use of maps available on the DataMapWales portal; this contains maps of our designated sites, Annex 1 habitats, Annex 2 species and Section 7 / OSPAR threatened and declining habitats and species. (p44).	Noted. Available data has been considered for use in the SEA appraisals, including OSPAR habitats, NRW sensitive habitats, Annex I habitats.
113	NRW	Q6-Fish: The following Wales specific report and maps also contains relevant data synthesis: Spawning and nursery grounds of forage fish in Welsh and surrounding waters from 2008 to 2020 and spawning and	Noted, however, at the plan stage, data has been considered that covers the full study area, where available. This data will

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		nursery grounds of forage fish in Welsh and surrounding waters from 2008 to 2020 - data.gov.uk	be noted for recommended consideration at the project level.
114	NRW	Q6: Physical Processes: There is no mention of data on wave and tidal characteristics in the Environmental Data table. This would be important to support analysis of both the geology/geomorphology sections and the water sections. Potentially could use the data in the Renewables Energy Atlas, although quite coarse spatial resolution.	This data has been included within the assessment for the Water topic for each of the Recommended Options.
115	NRW	Coastal ecology: Feature condition of designated sites Pg. 79 (Pg. 87). A17 2013-2018 for the UK as whole has been used to make an assessment of the condition of the Annex I habitats. This is a collated dataset for England, Scotland Northern Ireland and Wales and may not be representative of the habitat at the individual country level. Reg 9A data for Annex I habitats at the individual country scale will be more appropriate for reporting the condition and location of the feature pre-construction phase. These datasets should be available at the end of 2025	This data was unavailable in time for inclusion within the SEA ER and this has been noted in the data gap section.
116	NRW	Q6: Benthic: (p80) in relation to condition of designated sites and features in Wales, NRW have recently updated their marine SAC conservation advice packages and undertaken an updated condition assessments for marine SAC features. These documents will be in the public domain shortly and should be used as the baseline upon which to assess potential changes to SACs and features. Additionally, the SNCBs are in the process of completing Habitats Regulations Assessments (previously Article 17, now Reg9A) which will provide up to date information on the extent and distribution of Annex 1 habitats. The country-level Reg9a reports should be used as baseline extent and status of SAC features.	This data was unavailable in time for inclusion within the SEA ER and this has been noted in the data gap section.

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117	NRW	Q6: Up to date maps of OSPAR threatened and declining species in Wales are available on Environment (Wales) Act Section 7 and OSPAR: Marine Habitats | DataMapWales.	Noted. The SEA will consider this data in the appraisal of route corridors in Welsh waters.
118	NRW	Flood Risk: The National Coastal Erosion Risk Management map of predicted rates of coastal erosion in Wales is mentioned on page 163 and data is available at: National Coastal Erosion Risk Management (NCERM) | DataMapWales with some supporting information at: Natural Resources Wales / Check your coastal erosion risk (National Coastal Erosion Risk Management map). Shoreline Management Plans are mentioned on page 67 and present preferred sustainable coastal risk management policy direction, with data available at: Shoreline Management Plan Policies | DataMapWales and some supporting information at: Natural Resources Wales / Shoreline Management Plans.	Information provided in Section 4.3.4 is at the plan level is intended as an overview regarding the Welsh National Coastal Erosion Risk Management Map. For Shoreline Management Plans have been included under the State of the Environment Report to provide further context and background, additional text has been added to this section.
119	NRW	Q7-Coastal ecology: It is unclear how impacts will be assessed and potentially combined for biodiversity, flora and fauna. There are multiple receptors within this category that have different sensitivities to the pressures associated with cabling and placement of infrastructure associated with coastal habitats. It would be preferable for each biological receptor to be assessed individually against pressures initially before attempting to combine into a single value for biodiversity as a whole (using the highest potential impact for the individual receptors). It is currently very unclear how values will be calculated, and a final rating will be assigned.	Due to scale of plan level, assessment for overall SEA topic of BFF combines receptors for assessment. Specific impacted receptors will be detailed at any project level assessment as this will be dependent on the specific route and the impacted species and habitats.

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120	NRW	Q7-Benthic: It is unclear how impacts will be assessed and potentially combined for biodiversity, flora and fauna. There are multiple receptors within this category that have different sensitivities to the pressures associated with cabling and placement of infrastructure on the seabed. It would be preferable for each biological receptor to be assessed individually against pressures initially before attempting to combine into a single value for biodiversity as a whole (presumably taking the worst case out of the individual receptors). It is currently very unclear how values will be calculated, and a final rating will be assigned. We also recommend that the full suite of pressures associated with the construction, operation and decommissioning phases of the project are assessed thoroughly. Many of the pressures identified for the Construction phase in Appendix 12 should also be considered in the Operation and Maintenance phase as a result of ongoing cable repair and replacement operations during the life cycle of this project.	Due to scale of plan level, assessment for overall SEA topic of BFF combines receptors for assessment. The SEA ER will include information on the Appendix on Operation and maintenance phases impacts during project life cycle as these are assessed in SEA process
121	NRW	Q8-Birds: Yes, although there is no methodology on how this will be done.	Due to scale of plan level, assessment for overall SEA topic of BFF combines receptors for assessment. Scoring will be based on BRAG ranking and potential for direct / indirect impacts on designated / non-designated sites
122	NRW	Q8: Marine Mammals: We mainly agree with the objectives in principle, however, note the following comment: •One of the targets for the biodiversity flora and fauna topic is to "avoid areas of known importance for flora and fauna." While, given adequate mitigation, we would not expect adverse effects to marine mammal SACs, the development of harbour porpoise SACs (e.g. Bristol Channel Approaches) was heavily informed by sightings data, with persistent high-density areas used to	During the initial identification and assessment process for determined potential routes, SACs and SPAs were ranked as either amber or red based on the presence of sensitive features with red ranked areas avoided, otherwise a mitigation hierarchy should be followed

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		define the SAC borders (see JNCC Report 565). Thus, Bristol Channel Approaches would likely fall under the definition of “area of known importance".	to minimise impacts. Further information on the process and documentation used to determine these has been included in the SEA scoping report.
123	NRW	Q8: Physical Processes: Yes but feel it could be more explicit regarding the coast: the function of the seabed is mentioned, but not the function of the on-land geology/habitats; coastal processes (including aeolian) must be included and we believe they will be but it is uncertain as written.	No action needed
124	NRW	Q8: Benthic: In addition to those listed, the SEA objectives for Biodiversity should also seek to maintain the overall integrity of the designated sites network. The objectives are mostly restricted to designated sites and protected species / habitats but should also recognise the importance of connectivity between habitats and populations, and that impacts and changes to areas of seabed outside of sites may also lead to impacts on site features, and protected habitats and species.	Additional reference to the zone of effect has been included as a potential impact under the receptor of BFF.
125	NRW	Q8: Coastal ecology: The SEA objectives should also seek to maintain the overall integrity of the designated sites network and recognise the importance of connectivity between habitats.	Text on preserving, protecting, maintaining and enhancing the connectivity between sites and ecosystems has been included
126	NRW	Q9-Birds: Generally yes, although we note that the achievement of these timescales is dependent on the production of a thorough SEA document.	No action needed.
127	NRW	NESO may be aware of the Northern Irish Offshore Renewable Energy Action Plan (OREAP), which is also undergoing SEA. It may be useful to be aware of this plan for the HND/HND FUE SEA and future grid plans (CSNP, SSEP, SODA etc). (Offshore Renewable Energy Action Plan (OREAP): Consultation on the Strategic Environmental Assessment (SEA)	RPS, as contracted to undertake SEA are also undertaking the SEA for OREAP

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		Environmental Report and Report to Inform Appropriate Assessment (RIAA) | The Northern Ireland Executive)	
128	NRW	Page 110: The lists of species and SPAs for marine birds would be easier to digest and check if they were in tables rather than long lists and also had maps next to the text rather than in another part of the report. E.g. Repeating the map would be preferred. It would be good to present SSSIs for seabirds in this section along with maps.	Formatting and presentation of this information has not been amended for the SEA ER
129	NRW	Page 113: It is not "The RSPB's Seabirds count". It was led by JNCC but included all the SNCBs, RSPB, BTO and others. Seabirds Count | JNCC - Adviser to Government on Nature Conservation	Reference has been amended to JNCC
130	NRW	Page 113: when looking at status and trends, avian flu and the effects that this has had on seabirds must be included here.	Impacts of HPAI have been referred to under Section 4.3.1.7 and additional information included with information on the Seabird Count
131	NRW	Page 514: Collision risk is listed as a "short-term adverse effect", however any collision could have a long-term effect by reducing populations.	Collision risks in relation to marine cabling refers to the installation vessels associated with construction, decommissioning and maintenance which are short-term in their duration
132	NRW	Page 515: Here it states, "vegetation clearance activities occurring during the bird nesting season may result in the destruction of active nests". It must be noted that it is an offence to intentionally damage or destroy the nest of any wild bird while it is in use or being built.	Text within Appendix H has been amended to reflect legal position.

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133	NRW	In previous rounds of comments when commenting over proposed rankings from a marine mammal perspective, NRW mentioned that routing and relative scale of impact will depend on construction techniques, cable sizing and footprint, timings of construction/drilling, and the mitigation proposed. Effective mitigation (timings, micro siting etc) may exist that would reduce/remove effects for marine mammals in all cases. More effective assessment (such as through the Habitats Regulation Assessment (HRA) process) would allow a greater understanding of potential impacts and associated mitigation.	This comment has been passed along to AECOM for review and inclusion if appropriate
134	NRW	In our view, section 3.1.2 or the scoping report more generally does not currently provide sufficient information with regard to any proposed mitigation. Similarly, sections 3.1.1.1 and 3.1.1.2 are informative but insufficient information has been provided with regard to any proposed mitigation measures. While we would not expect a significant impact / adverse effect on marine mammal populations, we cannot fully agree to a BRAG of Green in Appendix D for offshore cables, offshore platforms and landfall without sight of the mitigation measures proposed.	The SEA ER includes mitigation measures however specific mitigation measures are likely only to be given at the project rather than plan level as these will be dependent on development location and the specific areas within the determined route.
135	NRW	Appendix H: Marine Mammals and Reptiles (page 512 – 514) We have the following comments with respect to the SEA topics / impact pathways listed: o Collision risk has been referred to as “short-term”. While we agree that the risk itself is short-term, a resultant collision event that may lead to mortality would have a high impact and in Welsh waters we advise that this is assessed by taking into consideration NRW’s mortality limits here. o It is unclear why noise and vibration from cables and EMF have been included as an impact pathway for marine mammals – further clarification should be provided. o Disturbance from underwater noise has been described as short-term	Collision risks in relation to marine cabling refers to the installation vessels associated with construction, decommissioning and maintenance which are short-term in their duration. There is potential for cables and EMF generation to be picked up by sensitive marine mammal species and full further scientific understanding has been recognised as being required for EMF. Noise related disturbances with regard to

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		and temporary. This is correct for single disturbance events (or multiple events where a considerable amount of time passes between each disturbance event), however the assessment should also consider the total additional load of disturbance introduced across repeated disturbance events.	marine cables are considered short-term as these are associated with either seabed clearance methods or vessels for installation during the construction or decommissioning phases with short-term noise possible during any maintenance periods.
136	NRW	P.96, bullet list of marine and coastal SACs: Dee Estuary SAC is not listed. Its features are sea and river lamprey. Pembrokeshire Marine SAC and Carmarthen Bay and Estuaries SAC appear under one bullet point. They have the same features but are two different sites. Also p.96, riverine SACs with diadromous fish features, the River Dee SAC and River Dee and Bala Lake SAC are both listed but is the same site. The following Welsh SAC sites have been omitted: Afon Cleddau, Afon Tywi, Afon Eden - Cors Goch Trawsfynydd. Although the main migration periods for diadromous fish are correct, it should be noted that juvenile shad spend the first winter in estuaries and adult shad feed extensively in near shore and coastal habitats for most of the year, and while most juvenile salmon exit the rivers in spring/early summer, some also migrate in the autumn.	Dee Estuary has been added, to note Pembrokeshire Marine and Carmarthen Bay and Estuaries are listed as two sites currently, so no change has been made here. River Dee SAC mentioned removed to only include River Dee and Bala Lake SAC. Additional Welsh SAC sites included. Additional information on shad and salmon has been added.
137	NRW	Appendix H – Geology, Soils and Land Use section: for offshore cabling there is no mention of the impact of sand wave clearance on sediment dynamics, through medium-term alteration of bed-load transport until the sand wave field recovers.	Additional text added to Appendix H for GSL impacts.

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138	NRW	Definition of coastal habitats* – what is included? The terms terrestrial, coastal, marine and intertidal habitats are not tightly defined in the document, and it is unclear which habitats are included in coastal when coastal is being referred to in the text. In many areas benthic, marine and coastal habitats are referred to, but the text only includes benthic or marine habitats with no detail for coastal habitats mentioned. Need to use the words coastal, marine, intertidal and terrestrial consistently throughout. It would be helpful to include this in the glossary.	Text has been added to BFF introduction section to cover terminology of various definitions. To note glossary in NESO template refers to abbreviation list.
139	NRW	Benthic: General Comments: 1) There is a confusing mix of marine and terrestrial elements to the document (e.g. in the designated habitats section, there are statistics given for all SACs and habitats, not just marine and coastal which is highly confusing, and much of the content on habitats and pressures is very generic, rather than focussing on marine and coastal elements). 2) It would be more helpful if biodiversity receptors were split, rather than lumping all biodiversity, flora and fauna together. Different pressures and pathways affect these receptors, meaning the levels of risk should be assessed independently. 3) Links and dependencies between biological receptors and physical processes need to be acknowledged and made clear.	As noted for benthic receptors as this is a plan level SEA assessment, specific receptors are likely more applicable at the individual project level dependent on the specific species and habitats impacted by development. This also applies to the information given on the marine and terrestrial environment as this is intended as an overview at the plan level assessment. As a plan level assessment so BFF considered as a whole topic, and information on specific receptors is more applicable at the individual project level.
140	NRW	P72 – Query whether references to the "Habitats Directive" should now be the "Conservation of Habitats and Species Regulations 2017 (as amended)"	Additional text to refer to Regulations included in brackets.
141	NRW	P 73 – the key issues table does not include pressures and impact pathways due to decommissioning and removal of infrastructure.	Additional text on post-decommissioning and infrastructure removal has been added to BFF key issues in Section 4.3.1

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142	NRW	P75 – Designated Sites Table contains incorrect information on SACs in Wales. The wording states that there are 7 SACs straddling Wales. This reads incorrectly. There are 7 fully marine habitat SACs in Wales, 2 of which (Dee Estuary and Severn Estuary) are cross-border sites with England. There are also 4 Coastal SACs that have marine habitat features, and 2 marine mammal SACs.	Text amended to reflect number of SACs within Welsh waters and shared with England
143	NRW	What is the source of the map in Figure 9? Is this EUSeaMap or Emodnet as mentioned in the text on p80? The UK combined map (available from JNCC) contains higher resolution information for the whole of the UK seabed (split into detailed habitat types).	Information on data source of EMODnet included in figure caption
144	NRW	P128 – what is the source of the bathymetry map in Figure 17? Reference needs adding.	Information on data source of EMODnet included in figure caption
145	NRW	P137 – Sites designated for geological features: This section confuses geological features with habitat features which is highly confusing. Annex 1 habitats such as sandbanks are Habitat features, not classed as geological features (geological sites have their own designations and features).	Under the SEA these are considered as a technical constraint. Annex 1 habitats are covered in BFF as a habitat but also under GSL due to geomorphological and geological feature e.g., sandbank and reefs due to implications of physical damage. Text has been added to the SEA scoping report.
146	NRW	P139: There are some factual inaccuracies regarding SAC sandbank designations on p139, para 1 where the text states" There are also several other SAC sites where Annex 1 sandbanks are present but are not a qualifying feature for site selection……" including Cardigan Bay, Pembrokeshire Marine and Severn Estuary. All of these sites in Wales are designated for Annex 1 sandbanks and are qualifying features. The text should be amended to say, "are not primary reasons for designation"	Text has been amended to reflect Annex 1 sandbanks are present but are not the primary reason for designation.

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		(though this is actually irrelevant because they would need to be scoped into any HRA undertaken for those sites; there is no value in identifying primary and secondary features as they are not treated or assessed differently).	
147	NRW	P142 para 2: dredging activity around Wales is not linked with the English Channel. This wording needs to be changed. Most aggregate extraction in Wales occurs in the Severn Estuary / Bristol Channel with an area licensed off the North Wales coast in Liverpool Bay.	Text has been amended to reflect information on dredging in Welsh waters
148	NRW	Section 4.3.6.3 Climate change projections: in relation to storms and waves, there is an updated evidence review by the Marine Climate Change Impacts Partnership that could be referenced in this section Storms and waves_update_May 2025.pdf	This additional information has been reviewed and text updated in SEA ER to include this.
149	NRW	Appendix H -benthic impacts for offshore construction and operation – an additional impact needs to be included for the ongoing long-term changes to physical processes resulting from placement of structures / cable protection on the seabed. This may lead to indirect impacts on benthic habitats within a wider zone of effect that the immediate footprint of activity.	Additional information on a wider zone of effect has been included in Appendix H
150	NRW	Appendix G: Scoring for biodiversity receptors: A distinction has been made between direct (scored -3) and indirect (scored -2) impacts on designated features. This is not logical given that receptors can be equally vulnerable to both direct and indirect pressures (i.e. an indirect pressure could have the same impact as a direct pressure). The severity of impact should be a product of the magnitude, duration, sensitivity and recoverability of the receptor, which is independent of whether the source of pressure is direct or not. This needs to be addressed and re-evaluated in the scoring system. I would also propose that impacts to designated	Scoring system is intending as a guide initially to show consultees a range of impacts and how these are significant, assessment will consider full source pathway receptor and expert opinion regarding this. Recoverability more likely considered at a project level as plan level intended as overview at a strategic level assessment. The potential impacts will

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		habitats and species outside of sites should not be automatically assigned a -1. If the habitat or species is highly vulnerable to damage, then this should be given a -2 or -3 depending on the likely severity (e.g. biogenic reefs outside of sites).	need fully considered at the project level. Additional text has been added to Section 6.1.2 of SEA ER
151	NRW	Section 5.2.1 outlines how the preferred options will be assessed, there is a section here for air quality, however, no details are currently available, and the report states the outcomes of the assessment will be populated once finalised.	At SEA scoping stage, this is given as an example of how the assessment will take place, this will be finalised within the SEA ER
152	Historic Environment Scotland	Q1-• Historic Environment Policy for Scotland • Our Past, Our Future – Strategy for Scotland's Historic Environment The policy and strategy are both national level documents which should influence plans within Scotland and should be included.	These plans have been added to the appendix of the SEA scoping report
153	Historic Environment Scotland	Q2-We are largely content with the data sources proposed for the historic environment in Scotland; however please note that Canmore is being replaced by Trove.scot.	Reference to new source of trove. scot has been included in SEA scoping report
154	Historic Environment Scotland	Q6-We would note that HERs (Historic Environment Records) are held by Local Authorities in Scotland as well as In England. Some of the data in the HERs for undesignated assets may not be held on Canmore/Trove.scot.	Several sources of heritage and historic information data has been used to inform the assessment
155	Historic Environment Scotland	Q8-For the most part we are content with the draft SEA objectives for cultural heritage. We recommend that it may be worth considering adding the words "where possible" in front of enhance in the cultural heritage objective as there may be instances where it is not possible to enhance the historic environment, and the current wording does not take this circumstance into account.	Wording of "where possible" has been added into SEA objective

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156	Historic Environment Scotland	Q8-We also note that the indicators for cultural heritage only reference designated marine heritage assets such as HMPAs or protected wrecks. There is no mention of undesignated assets such as undesignated wrecks or submerged landscapes etc. This would potentially not achieve the aim of the objective description – to protect international, national and local heritage, as the majority of local heritage assets are not designated. The same point is also true for designated coastal archaeological or architectural heritage assets.	Text referring to non-designated heritage assets / features has now been included in the SEA scoping report
157	Historic Environment Scotland	Q8-We welcome the targets to minimise the potential for effects on known marine and onshore heritage assets and their settings. It may be worth considering whether these targets should read, "Avoid or minimise the potential for effects…" to take account of highly protected sites such as scheduled monuments where direct impacts must be avoided, and any would also require an additional consent which may not be granted.	Additional wording added to SEA targets for heritage
158	Historic Environment Scotland	Appendix A: SEA Screening Responses – We note that screening responses from Scottish consultees are not represented in this Appendix.	No action needed
159	Historic Environment Scotland	To note that in Scotland listed buildings are classified into categories A, B and C rather than grades as In England and Wales.	Additional text explaining use of categories and grades has been added to Section 4.3.8.1
160	Historic Environment Scotland	Appendix D: Environmental Data considered in route and options appraisals – We note that Conservation Areas are not identified in the list of themes but were considered during the appraisal processes.	No action needed

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161	Historic Environment Scotland	Appendix I: Draft SEA scoring guidelines – We note that the negative scoring guidelines for cultural heritage and the historic environment refer to impacts on both site and setting of various asset types whereas the positive scoring guidelines refer only to impacts on setting of assets for slight and moderate negative effects (not impacts on the sites themselves) and the significant negative effects only refer to impacts on the sites and not impacts on setting. All of the potential effects should refer to impacts on both sites and their settings as both have the potential to occur through the implementation of the plans	Draft SEA scoring guidelines for both positive and negative effects refer to either features rather than sites, inclusion of sites and settings has been made in updated SEA scoring text.
162	JNCC	Q1-Additional plans and programmes to be included: •The UK National Biodiversity Strategy and Action Plan (NBSAP) for 2030: This strategy outlines the United Kingdom's response to the Kunming-Montréal Global Biodiversity Framework (GBF), which aims to halt and reverse biodiversity loss by 2030. A central objective of the GBF is the protection and restoration of habitats, which is directly relevant to the implementation of the HND Plan. • The Environmental Improvement Plan (EIP): Building upon the 25-Year Environment Plan (already referenced) and the Environment Act 2021, the EIP introduces mechanisms such as Nature Networks and Local Nature Recovery Strategies (LNRS). These tools are important in identifying and prioritising local actions for nature restoration and involve close collaboration with regional stakeholders. •The Scottish Biodiversity Strategy to 2045: This strategy articulates Scotland's vision for achieving Nature Positive outcomes by 2030 through biodiversity recovery and ecosystem regeneration. Its inclusion is essential for ensuring coherence across devolved administrations and The Wales Nature Recovery Action Plan (NRAP) – Updated 2021: This plan reaffirms Wales's commitment to reversing biodiversity loss and sets out	The Scottish Biodiversity Strategy to 2045 and the Environmental Improvement Plan (2023) are already included in the SEA scoping report. The NBSAP has been included in the appendix of the SEA scoping report

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		clear objectives and priorities for action, reflecting the evolving environmental baseline.	
163	JNCC	Q2-Temporal scope: JNCC note that the scoping report proposes to consider effects from the construction phase only. We advise that impacts from operation /maintenance and decommissioning should also be included to establish the full impacts of the Plan.	No action needed
164	JNCC	Q2-Geographical Scope: The number of designated sites in relation to the Plan have been summarised in Table 9, however, these should be listed and included in the scoping report for clarity, considering which sites have been scoped in or scoped out and why.	No action needed
165	JNCC	Q2: The scoping report provides an example of the assessment methodology in the appendices. A BRAG rating (Black, Red, Amber, Green) can be used as a simplified tool for assessing and communicating environmental effects, but it does not fully replace a significance matrix in the context of a formal SEA. The cable route is considered within a table but the detail surrounding crossing locations and requirement for cable protection within MPAs is not clear. It is important to include details of the activity within an MPA to enable a more accurate BRAG scoring.	No action needed
166	JNCC	Q2: Are NESO able to provide further information on the GIS modelling and clarity on how a footprint for each constraint has been defined and applied to enable creation of a cabling heat map or cost surface? The footprint of an activity is dependent on the receptor and its sensitivity. It is not clear in the methodology how this has been captured.	As part of the GIS modelling of constraints, the footprint of a constraint/feature was not defined by its perceived sensitivity. In most cases the boundary of areas/sites was used, or areas of high use for certain activities relative to the overall study area. For point data e.g., wrecks, the use of buffers as included in the constraints data is to

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			ensure the direct avoidance of features within the GIS model and is not the same as avoidance buffers for actual projects. Buffers are applied only to ensure that the GIS model identifies these features and that they become part of the appraisal. Note that the constraints modelling was a first step to inform the avoidance of areas of highest sensitivity across many topics, with subsequent SEA appraisal that considered sensitivities.
167	JNCC	Q2: Clarity is required on if the assessment methodology will include consideration of magnitude and duration and how cumulative effects will be captured.	The SEA will include consideration of the potential magnitude and duration of effects, as required by legislation. As part of the appraisal of each of the Recommended Designs of the HND Implementation Plan, the SEA will assess the potential for cumulative effects for each SEA topic. In addition, the SEA will identify the potential for cumulative effects of the plan in its entirety, including in-combination effects of elements within the plan itself, and potential effects with other relevant plans or projects.

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168	JNCC	Q2: The assessment in Appendix F suggests that mitigation will reduce BRAG ratings. However, JNCC is concerned that some measures, such as rock protection used when cable burial is inadequate, may have an adverse effect on marine habitats and species, and these impacts are not being properly accounted for in the assessment. We are also concerned that using mitigation measures that are not a firm commitment will artificially reduce the BRAG ratings and lead to difficult environmental issues that need resolving further down the line. Further information and clarity on the methodology would be welcome.	At this stage due to being a plan level SEA assessment, mitigation measures proposed are generalised, recommended that further consideration on appropriate mitigation measures are considered as the project level phase, text referring to this has been included within the SEA assessment
169	JNCC	Q3: Biodiversity, flora and fauna as mentioned above, JNCC would like to understand what 'footprint' has been used to scope potential effects to biodiversity, flora and fauna. The footprint of an activity is dependent on the receptor and its sensitivity. More clarity is required on how this has been captured.	See response to previous comment (No. 167)
170	JNCC	Q3: Only the construction phase appears to have been scoped into the assessment. JNCC advise that the operation, maintenance and decommissioning phases of the Plan are also included.	All phases are considered during assessment of SEA process and have been discussed/assessed in SEA ER. Note that similar impacts between construction and decommissioning phase but can reduce double habitat loss with leaving cables/protective materials in-situ.
171	JNCC	Q3: In relation to scoring in Appendix D, National Parks have been referred to offshore, please could NESO clarify what MPAs these areas represent and the justification for red scoring onshore and amber scoring for offshore? JNCC consider such areas should have the same weighting both onshore and offshore as the features hold the same value.	No action needed

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172	JNCC	Q3: A distinction has been made in Appendix D between SAC and SPAs with sensitive features and without sensitive features. Please could NESO confirm how they intend to draw this distinction in the assessment and if this will come from the MCZ and HRA assessments? Please refer to the JNCC site information centre or equivalent for other SNCBs and our advice on operations to identify if features are sensitive to development activities? Information on MPA sensitivity can be found here: https://jncc.gov.uk/news/site-information-centres-one-stop-shops-for-offshore-marine-protected-area-information/ JNCC defer to other SNCBs for information on inshore MPAs.	SEA assessment has been reconsidered under whole BFF topic with MCZ and HRA assessment also feeding into this. SEA Scoping document has been updated to include reference to documentation used in this initial assessment of sensitive features. (Nature conservation considerations and environmental best practice for subsea cables for English Inshore and UK offshore waters by NE and JNCC, Sensitivity of marine ecology receptors to cabling activities in Wales by NRW, and Natural England and JNCC advice on key sensitivities of habitats and Marine Protected Areas in English Waters to offshore wind farm cabling within Proposed Round 4 leasing areas by NE and JNCC)
173	JNCC	Q4: We note that the key issues highlighted for Biodiversity, Flora and Fauna include only the construction phase of the Plan. As mentioned above, JNCC advise that significant impacts can arise from maintenance and decommissioning activities and would like to see these phases thoroughly considered in the SEA assessment.	All phases are considered during the assessment of SEA process and are discussed/assessed in SEA ER. Note that similar impacts between construction and decommissioning phase but can reduce double habitat loss with leaving cables/protective materials in-situ.

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174	JNCC	Q4: JNCC are particularly concerned with the amount of potential rock protection required for cable development, maintenance and decommissioning as this can lead to permanent habitat loss and / or change. As per the mitigation hierarchy we advise that route development seeks to select corridors firstly outside of MPAs, or if within MPAs then designated features are avoided. Further mitigation of impacts can be realised where burial is achievable and likely to remain buried throughout the lifetime of the cable and crossings are minimised. Given predicted climate change and potential acceleration of this, JNCC recommend careful consideration of future physical environmental conditions when considering cable burial requirements particularly in areas with mobile seabed features.	No action needed
175	JNCC	Q4: Due to the scale of future developments offshore, in order to minimise impacts to the marine environment, it may be necessary for the Plan to consider co-location of infrastructure where possible and collaboration to allow installation and maintenance of adjacent infrastructure to be planned at the same time. This approach will minimise the footprint to marine benthic habitats limiting the extent and duration of any disturbances and minimise persistence of vessel activity. This is particularly important within sites or where there are sensitive features.	No action needed
176	JNCC	Q4: JNCC also advise that where installation may be within a site where byelaws for fisheries are in place prohibiting bottom towed gear, that rock protection is not required in such areas.	Additional text added to Appendix H on commercial fisheries and aquaculture

Comment No.	Respondent	Comment	Action
177	JNCC	Q4: The key environmental pressures that should be considered for cable installation, maintenance and decommissioning are: •Abrasion/disturbance of the substrate on the surface of the seabed. •Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion. •Physical change (to another seabed type). •Physical change (to another sediment type). •Changes in suspended solids (water clarity). •Smothering and siltation rate changes (Light). •Introduction or spread of invasive non-indigenous species (INIS). •Habitat structure changes - removal of substratum (extraction). •Water flow (tidal current) changes, including sediment transport considerations. •Underwater noise changes, vibration and visual disturbance.	SEA scoping table has been updated to ensure all listed high-level impacts are included.

Comment No.	Respondent	Comment	Action
178	JNCC	Q5: Biodiversity, Flora and Fauna and Benthic and intertidal habitats: We would like to draw attention to the JNCC MPA mapper to ensure all offshore designated sites are captured in the SEA Assessment. In considering impacts to offshore MPAs JNCC advise NESO to review JNCC MPA site information centres which provide links to site conservation objectives, and supplementary advice on conservation objectives (SACO) information which includes information on site condition and general management approach. This information and JNCCs Advice on Operations (AOO) for each site is important when considering impact pathways from infrastructure development. Further information can be found here: https://jncc.gov.uk/news/site-information-centres-one-stop-shops-for-offshore-marine-protected-area-information/ Other sources of useful information are: The MarLIN Marine Evidence based Sensitivity Assessment (MarESA) is a useful tool for looking at the distribution of sensitive species and features throughout UK waters. https://www.marlin.ac.uk/sensitivity/sensitivity_rationale The Cefas OneBenthic tool is available for looking at benthic assemblages throughout the UK waters. https://openscience.cefas.co.uk/ob_mtest/ In Scotland, the National Marine Plan interactive mapping tool is useful to locating industry and ecology features. Similarly, for English inshore waters there is the DEFRA Magic mapping tool and in Wales there is the Wales Marine Planning Portal. Scotland https://marinescotland.atkinsgeospatial.com/nmpi/ England https://explore-marine-plans.marineservices.org.uk/marine-plans-explorer https://magic.defra.gov.uk/MagicMap.html Wales https://lle.gov.wales/apps/marineportal/#lat=52.5129&lon=-3.9111&z=8&tgt=false&layers=231,390	Link to further information on MPA sites no longer working. MarLIN Marine Evidence Bases Sensitivity Assessments data too detailed for strategic level, to be considered at project level. NMPi, DEFRA Magic tool and Welsh Marine Portal checked for data. All data specific to regions. No additional data

Comment No.	Respondent	Comment	Action
179	JNCC	Q5: Birds JNCC currently advise that Marine Ecosystems Research Programme (MERP) maps (Waggitt et al, 2019) are consulted when conducting impact assessments. The Seabird Monitoring Programme (SMP) database may also be a useful resource for information on seabird colonies.	Noted. The Waggitt et al, 2019 distributions for marine mammal and seabird species cover the study area and will be considered in the SEA appraisals.
180	JNCC	Q5: Birds: The POSEIDON (Planning Offshore Wind Strategic Environmental Impact Decisions) project aims to produce tools to highlight key species and habitats that are vulnerable to offshore wind development (including cabling) and to aid future marine spatial planning. This may be a useful resource to use if the outputs are available at the time of this assessment.	This data was unavailable in time for inclusion within the SEA ER and this has been noted in the data gap section.
181	JNCC	Q5: Birds: Due to the sensitivity of red-throated diver to vessel disturbance, JNCC advises NESO to the Joint SNCB Interim Displacement Advice Note which informs the potential extent and consequences of seabird displacement from offshore developments including vessels. This advises buffers of 2.5km around each vessel is applied for the assessment of 100% displacement of common scoter (Fliessbach et al., 2019), and 2.0km buffer is applied for the assessment of 100% displacement of red-throated diver (Burt et al., 2022, Burger et al., 2019). It should be noted that these species are non-breeding features of the SPAs and therefore such disturbance can be avoided through limiting activity during the sensitive over-wintering periods. Further information on the specific conservation objectives for each site, and the seasonality and sensitivity of qualifying features can be found in the conservation advice packages (see links for Biodiversity section above).	Information regarding the use of buffer zones around certain species has been added to the mitigation table and reference to guidance note included

Comment No.	Respondent	Comment	Action
182	JNCC	Q5: Marine Mammals We highlight that cetacean densities are now available following completion of the Small Cetacean Abundance in the European Atlantic and North Sea (SCANS) IV survey, and we anticipate the published densities for the Inter-Agency Marine Mammal Working Group (IAMMWG) cetacean management units being updated to reflect this new information in the near future.	Data for marine mammal on cetacean densities has been updated from SCANS 3 to SCANS 4 data within SEA assessment
183	JNCC	Q5: Noise is considered to be a source of marine pollution. The JNCC guidelines for minimising the risk of injury to marine mammals from unexploded ordnance (UXO) clearance in the marine environment has recently been updated and can be found here: https://data.jncc.gov.uk/data/cbd480f1-47ea-4d78-b94c-04e0f9389daa/jncc-guidelines-unexploded-ordnance.pdf Further information on Defra's policy paper on reducing underwater noise in relation to marine mammals can be found here: https://www.gov.uk/government/publications/reducing-marine-noise/reducing-marine-noise	Reference to these reports has been included in the SEA scoping report and will be added to SEA ER text on mitigation measures.
184	JNCC	Q5: To manage disturbance arising from noisy activities within these sites designated for marine mammals, spatial temporal thresholds have been introduced. We recommend Effective Deterrence Ranges (EDRs) are applied for noisy activities (JNCC, 2020). Please see here for further information: https://hub.jncc.gov.uk/assets/2e60a9a0-4366-4971-9327-2bc409e09784 We highlight the published EDRs are currently under review and updated ones will be available later this year.	Reference to these reports has been included in the SEA ER text on mitigation measures.
185	JNCC	Q7: JNCC expect any route development to take full account of the mitigation hierarchy with a starting position that designated sites should avoided in the first instance. If this is not possible then all efforts should be made to avoid features within the sites as a priority.	Noted, the approach at a plan level has aimed to avoid designated areas, the text on methodology has been reviewed and now explicitly state will be used to avoid features within the sites however

Comment No.	Respondent	Comment	Action
			degree of this planning likely applicable only at a project level and will depend on the habitats and species impacted by development.
186	JNCC	Q8: The indicators for BFF should also include PMF and Annex I habitats.	Currently data table refers to protected and priority fish and shellfish species and also benthic features as well. Annex 1 Habitats under BFF topic in draft SEA objectives table as an indicator.
187	JNCC	Q9: As previously commented in JNCCs response to the SEA Implementation Plan, JNCC are a statutory consultee for nature conservation advice for English, Scottish and Welsh offshore waters (beyond 12NM). JNCC are not listed under Section 1.6 and 6.1 of the HND Scoping Report. To ensure statutory obligations are met and to support the delivery of robust environmental assessments, please ensure you include JNCC in all relevant consultations moving forward.	JNCC has been included by NESO for all consultations with all consultee responses carrying equal weighting
188	JNCC	We also note that the scoping document is not currently available for download, and the appendices have not been provided as separate files. This limits accessibility (for example when needing specialist review of information) and makes document navigation and sharing more time-consuming. We would appreciate it if these materials could be made available in a more user-friendly format.	Documentation will be available for download (with any confidential information removed)
189	SEPA	Q5: 4.2.2 of Scoping Report refers to 2014 State of the Environment Report, the most accurate and up-to-date information can now be found in the "Our Environment" section of Scotland's environment web, this is now Scotland's statutory State of the Environment (SoE) report	Scotland state of the environment table has been updated based on information from Scotland's environment web, it should be noted that some sections of

Comment No.	Respondent	Comment	Action
			information on this website refer directly to the 2014 SoE report.
190	SEPA	Q5: Flood risk zones are areas defined by the Environment Agency to show the likelihood of an area flooding and cover England, Flood maps available on SEPA's website show the areas in Scotland that are likely to flood from rivers, the sea and surface water	Data already covered within assessment
191	SEPA	Q6: Carbon and Peatland 2016 Map NatureScot is a useful tool to provide an indication of the likely presence of peat	Additional text on peatlands added to SEA ER
192	SEPA	Q6: SEPA's website holds significant amounts of useful environmental data for preparing the environmental baseline	Data already covered within assessment
193	SEPA	Q6: The Water Environment Hub and the Water Classification Hub provide useful information about the water environment including the latest and previous status of waterbodies	Data already covered within assessment
194	SEPA	Q8: GSL-the indicators for this topic should be expanded to include potential scale of loss of peatland and carbon-rich soils as well as high quality agricultural lands. Similarly, one of the targets should be to minimise the potential loss of peatlands and carbon-rich soils. The targets should also consider opportunities for enhancement.	High quality agricultural land has been included as an indicator already, inclusion of peatlands/carbon rich soils has been added as an indicator and as a target to enhance these where possible to SEA objectives table

Appendix B – SEA Guidance



Office of the Deputy Prime Minister (2005). A Practical Guide to the Strategic Environmental Assessment Directive.

Historic England (2016). Sustainability Appraisal and Strategic Environmental Assessment. Historic England Advice Note 8

Scottish Government (2013). Strategic Environmental Assessment Guidance.

Scottish Environment Protection Agency (2019). Guidance on Consideration of air in Strategic Environmental Assessment.

Scottish Environment Protection Agency (2019). Guidance on Consideration of material assets in Strategic Environmental Assessment.

Scottish Environment Protection Agency (2019). Guidance on Consideration of soil in Strategic Environmental Assessment.

Scottish Environment Protection Agency (2019). Guidance on Consideration of water in Strategic Environmental Assessment.

Scottish Environment Protection Agency (2019). Guidance on Consideration of climatic factors within Strategic Environmental Assessment.

Scottish Environment Protection Agency (2019). Guidance on Consideration of human health within Strategic Environmental Assessment.

NatureScot (2017). Landscape Considerations in Strategic Environmental Assessment.

NatureScot (2017). Biodiversity and geodiversity Considerations in Strategic Environmental Assessment.

Welsh Government (2015). Strategic Environmental Assessment (SEA) in Wales.

Appendix C– Environmental Data Considered in Route and Options Appraisal and BRAG Rating Descriptions



Theme	Data Displaying	Offshore Cables	Offshore Platforms	Landfall	Onshore Cables	Onshore Stations	SEA Topic
National Parks	UK National Parks	N/A	N/A	A	A	R	L
Areas of Outstanding Natural Beauty (AONBs)	England and Wales AONB and Scotland NSAs	N/A	N/A	A	A	R	L
Heritage Coasts	England and Wales Heritage Coasts	N/A	N/A	A	A	R	CH and L
National trails	England and Wales National Trails, and Scotland's Great Trails	N/A	N/A	A	A	A	L
NRW Key Sensitive Habitats	Natural Resources Wales identified Key Sensitive Habitats	R	R	R	R	R	BFF
Special Areas of Conservation (SAC)	Onshore and offshore UK SACs - identified as having sensitive features	R	R	R	R	R	BFF
	Onshore and offshore UK SACs - not identified as having sensitive features	A	A	A	A	R	BFF
Special Protection Areas (SPA)	Onshore and offshore UK SPAs - identified as having sensitive features	R	R	R	R	R	BFF
	Onshore and offshore UK SPAs - not identified as having sensitive features	A	A	A	A	R	BFF
pSPAs	England and Scotland proposed SPAs identified as having sensitive features	R	R	R	R	R	BFF
	England and Scotland proposed SPAs	A	A	A	A	R	BFF
cSACs	UK candidate SACs identified as containing sensitive features	R	R	R	R	R	BFF

Theme	Data Displaying	Offshore Cables	Offshore Platforms	Landfall	Onshore Cables	Onshore Stations	SEA Topic
	UK candidate SACs	A	A	A	A	R	BFF
SCI	Sites of Community Importance	A	A	A	A	R	BFF
Ramsar sites	UK RAMSAR sites	A	A	A	A	R	BFF
Proposed Ramsar sites	UK Proposed Ramsar sites	A	A	A	A	R	BFF
SSSIs	UK SSSIs	A	A	A	A	R	BFF
National Nature Reserves (NNRs)	UK National Nature Reserves	A	A	A	A	A	BFF
Biosphere Reserves	UK Biosphere Reserves	G	G	G	G	G	BFF
Marine Protected Areas (Scotland)	Scottish Marine Protected Areas identified as containing sensitive features	R	R	R	N/A	N/A	BFF
	Scottish Marine Protected Areas	A	A	A	N/A	N/A	BFF
Marine Conservation Zones	UK Marine Conservation Zones - identified as having sensitive features	R	R	R	N/A	N/A	BFF
	UK Marine Conservation Zones - not identified as having sensitive features	A	A	A	N/A	N/A	BFF
HPMA	Highly Protected Marine Areas	B	B	B	N/A	N/A	BFF
Priority Marine Features (Scotland)	Identified as particularly sensitive	R	R	R	N/A	N/A	BFF
	Other PMFs	A	R	A	N/A	N/A	BFF
Ancient Woodlands	UK Ancient Woodlands	N/A	N/A	A	A	R	BFF
Important Bird Areas	UK Important Bird Areas	G	G	G	G	A	BFF

Theme	Data Displaying	Offshore Cables	Offshore Platforms	Landfall	Onshore Cables	Onshore Stations	SEA Topic
RSPB Reserves	UK RSPB Reserves	G	G	G	G	A	BFF
Seabird At Sea Density (Summer/Winter)	UK Seabirds at Sea Density	G	G	N/A	N/A	N/A	BFF
Annex 1 Reefs	UK Annex 1 Reefs outside designated areas	A	A	A	N/A	N/A	BFF
Annex 1 Sandbanks	UK Annex 1 Sandbanks outside designated areas	A	A	A	N/A	N/A	BFF
Annex 1 Submarine Structures	UK Annex 1 Submarine Structures outside designated areas	A	A	A	N/A	N/A	BFF
Annex 1 Saltmarsh	UK Annex 1 Saltmarsh outside designated areas	A	A	A	N/A	N/A	BFF
UK Grey Seals	UK Grey Seal - High density	G	G	A	N/A	N/A	BFF
UK Harbour Seals	UK Harbour Seal - High density	G	G	A	N/A	N/A	BFF
SCANS 3 (marine mammal densities)	UK Marine Mammal densities	G	G	G	N/A	N/A	BFF
Fish spawning grounds	UK Fish spawning grounds 2010	G	G	N/A	N/A	N/A	BFF
Fish nursery grounds	UK Fish Nursery grounds 2010	G	G	N/A	N/A	N/A	BFF
World Heritage Sites (WHS)	UK World Heritage Sites	R	R	R	R	B	CH
Scheduled Monuments	UK Scheduled Monuments	R	R	R	R	R	CH
Listed Buildings	UK listed buildings (Grade I, II* and II listed buildings)	N/A	N/A	A	A	R	CH

Theme	Data Displaying	Offshore Cables	Offshore Platforms	Landfall	Onshore Cables	Onshore Stations	SEA Topic
Registered Parks and Gardens and Gardens and Designed Landscape	Registered Parks and Gardens and Gardens and Designed Landscape	N/A	N/A	A	A	R	CH
Wreck locations	UK wreck locations	R	R	R	N/A	N/A	CH
Protected wrecks	Protected wrecks - England and Wales	R	R	R	N/A	N/A	CH
Ship Hulk	Ship Hulk	R	R	R	N/A	N/A	N/A Technical
Registered Battlefields	Registered Battlefields - England and Scotland	N/A	N/A	A	A	B	CH
Historic marine protected areas	Historic Marine Protected areas - Scotland	R	B	R	N/A	N/A	CH
Air Quality Management Areas (AQMAs)	UK Air Quality Management Areas	NA	NA	NA	G	G	A
Major Settlements	UK Major Urban Settlements (for noise, see also Socio-Economics)	N/A	N/A	G	G	A	PHH and MA
Geoparks	UK Geoparks	N/A	N/A	G	G	G	GSL
Water- lakes	Lakes and large water bodies for GB	N/A	N/A	N/A	A	B	W
Water- rivers	Rivers for GB	N/A	N/A	G	G	R	W
National Flood Zones/Areas Benefiting from Defences	3 National Flood Zones and 3 Areas benefiting from defences	N/A	N/A	G	G	A	W

Theme	Data Displaying	Offshore Cables	Offshore Platforms	Landfall	Onshore Cables	Onshore Stations	SEA Topic
Former landfill sites	England and Wales former landfill sites	N/A	N/A	A	A	A	GSL
Major settlements/Urban Areas	UK Major Urban Settlements	N/A	N/A	A	A	R	PHH and MA
National Trust Land	National Trust Open Land and Limited Access Land	N/A	N/A	A	A	R	L
Trans-European Networks (roads or national/European walking/cycling routes)	Roads and Railway	N/A	N/A	G	G	R	MA
Military Airfields/ Sites/ Practice Areas	Military Areas - Onshore sites and Offshore live firing areas	A	R	A	G	R	MA
Passenger Airports	Airports	N/A	N/A	A	A	R	MA
Major onshore utilities and other installations	Includes electrical and gas but not telecoms	N/A	N/A	A	A	B	MA
Port Lands		R	R	R	R	R	MA
Harbour Areas		G	A	G	N/A	N/A	MA
RYA marinas	RYA marinas	R	R	R	N/A	N/A	PHH
RYA sailing and racing areas	RYA Boating Areas	G	A	G	N/A	N/A	PHH
Dredging	UK Dredging Navigation	A	R	A	N/A	N/A	MA
	UK Aggregate Dredging Extraction	R	R	R	N/A	N/A	MA

Theme	Data Displaying	Offshore Cables	Offshore Platforms	Landfall	Onshore Cables	Onshore Stations	SEA Topic
Dredge and Spoil Dumping Sites	UK Dredge Spoil Dumping Sites	R	A	N/A	N/A	N/A	GSL and W
Offshore energy generation and cable routes	UK Offshore Energy Generation Sites – Existing sites	R	R	N/A	N/A	N/A	MA
	UK Offshore Energy Generation Sites – Proposed sites	R	R	N/A	N/A	N/A	MA
	UK Offshore Energy Cable Routes – Existing routes	A	A	R	N/A	N/A	MA
	UK Offshore Energy Cable Routes – Proposed routes	A	A	R	N/A	N/A	MA
Offshore Infrastructure	Offshore Telecom Cables	A	A	A	N/A	N/A	MA
	Offshore Power Cables	A	A	A	N/A	N/A	MA
	Offshore Pipelines	A	A	A	N/A	N/A	MA
	UK Oil and Gas Wells and Diffusers	R	R	N/A	N/A	N/A	MA
	UK Offshore Oil and Gas Installations	R	R	R	N/A	N/A	MA
	UK Offshore Carbon Capture and Storage Site Agreements	A	A	N/A	N/A	N/A	MA
	UK Offshore Meteorological and Oceanographic Equipment Agreements	A	A	N/A	N/A	N/A	MA
Other planned infrastructure	e.g. coastal development near potential landfall areas	A	A	A	A	A	MA
Traffic separation zone	Traffic Separation Zones	A	B	N/A	N/A	N/A	MA

Theme	Data Displaying	Offshore Cables	Offshore Platforms	Landfall	Onshore Cables	Onshore Stations	SEA Topic
Shipping lanes	Shipping lanes	A	B	A	N/A	N/A	MA
AIS Vessel Density Grid	UK AIS Vessel Density grid High density shipping areas	A	A	A	N/A	N/A	MA
Designated anchorage areas	Designated anchorage areas	R	R	R	N/A	N/A	MA
Bathing waters	Bathing Water	G	R	G	N/A	N/A	PHH
Shellfish waters	Shellfish Waters	G	A	G	N/A	N/A	PHH
Fishing activity	UK Fishing Activity-Areas of high intensity fishing effort	G	G	G	N/A	N/A	MA
Marine Fish Farms	UK Marine Finfish	A	R	A	N/A	N/A	MA
Bathymetry	Slope 10 - 15%	G	G	G	N/A	N/A	N/A Technical
Bathymetry	Slope >15%	R	B	R	N/A	N/A	N/A Technical
Bathymetry	Depth <10m	G	B	N/A	N/A	N/A	N/A Technical
Bathymetry	Depth <10m and Depth >50m	N/A	G	N/A	N/A	N/A	N/A Technical
Bathymetry	Depth <50m and Depth >100m	N/A	A	N/A	N/A	N/A	N/A Technical
Bathymetry	Depth <100m and Depth >150m	N/A	R	N/A	N/A	N/A	N/A Technical

Theme	Data Displaying	Offshore Cables	Offshore Platforms	Landfall	Onshore Cables	Onshore Stations	SEA Topic
Bathymetry	Depth <150m	N/A	B	N/A	N/A	N/A	N/A Technical
Cliff Shoreline	>15m	N/A	N/A	R	N/A	N/A	N/A Technical
Average Wave Height (sig wave 50%tile)	>2.5m	N/A	R	N/A	N/A	N/A	N/A Technical
Uplands Topography	>200m	N/A	N/A	N/A	G	R	N/A Technical
Slope Topography	Slope >57% (30 degrees)	N/A	N/A	N/A	R	R	N/A Technical
Areas of mobile sediment- from sand or Rock/ other substrata part of data	Offshore Sand	G	G	G	N/A	N/A	N/A Technical
Known geological constraints (Offshore)	Offshore Rock	A	A	A	N/A	N/A	N/A Technical
Known geological constraints (Onshore)	Shallow soils and exposed rock	N/A	N/A	A	A	G	N/A Technical

Constraints BRAG Ranking Definitions

Rating	Environment / Community	Technical[1]
Black	Features, receptors or designations which affect the likelihood of an Option being achievable to such a degree that the Option is not likely to meet the derogation test precluding consenting and thus should not be considered as part of the design.	Features or constraints that are likely to affect the feasibility of construction and/or buildability of the Option to such a degree that the Option is not considered as part of the design.
Red	Features, receptors or designations that are so significant, sensitive or pose such a high degree of risk to the design that they should be avoided*, examples would include designated areas identified by statutory bodies to contain designated features sensitive to impacts by cabling operations and where impacts could result in an adverse effect on site integrity thus requiring a derogation for development to proceed.	Features or constraints that are likely to affect the feasibility of construction and/or buildability of the design to such a degree that the Option affecting them should not be progressed without potential solutions to the issues being identified.
Amber	Most protected features, sensitive receptors and/or areas that are likely to require detailed assessment and potentially mitigation and should be avoided* if possible.	Significant technical constraints that may cause cost increases and/or significant schedule delays; not ideal but likely to be achievable and/or capable of resolution.
Green	Features, receptors or designations to be considered in constraint assessment/study but which are likely to be capable of resolution.	Informative of approach but medium to low likely technical constraint causing cost increase and / or schedule delays.

1 RPS' consideration of technical constraints was limited to factors that physically affect the installation of cales between the offshore wind farm and the interface point with the onshore grid and were ultimately included under the deliverability objective along with other factors such as technology.

*To be avoided except for linear constraints – being point to point features, where it is not possible to develop a route corridor between the OWF and interface point without crossing the constraint. Route corridors where this applied inherited and retained the relevant ranking through subsequent stages.

Initial Routing BRAG Ranking Definitions

Rating	Environment	Community	Technical[1]
Black	Significantly constrained Option. Unlikely to be viable due to significant environmental issues.	Significantly constrained Option. Unlikely to be viable due to social/community issues.	Significantly constrained Option. Unlikely to be viable due to significant planning/consenting or technical issues.

Rating	Environment	Community	Technical[1]
Red	Heavily constrained Option. Potentially viable however, will have to overcome many environmental issues.	Heavily constrained Option. Potentially viable however, will have to overcome many social/community issues.	Heavily constrained Option. Potentially viable however, will have to overcome many planning/consenting or technical issues.
Amber	Moderately constrained Option. Likely viable however, may have to overcome some environmental issues.	Moderately constrained Option. Likely viable however, may have to overcome some social/community issues.	Moderately constrained Option. Likely viable however, may have to overcome some planning/consenting or technical issues.
Green	Lightly constrained Option. Likely viable without any major environmental issues.	Lightly constrained Option. Likely viable without any major social/community issues.	Lightly constrained Option. Likely viable without any major planning/consenting or technical issues.

Option Appraisal Summary Table BRAG Ranking Definitions

Rating	Environment	Community	Technical[1]
Black	Significantly constrained Option. Unlikely to be viable due to significant environmental issues.	Significantly constrained Option. Unlikely to be viable due to social/community issues.	Significantly constrained Option. Unlikely to be viable due to significant planning/consenting or technical issues.
Red	Heavily constrained Option. Potentially viable however, will have to overcome many environmental issues.	Heavily constrained Option. Potentially viable however, will have to overcome many social/community issues.	Heavily constrained Option. Potentially viable however, will have to overcome many planning/consenting or technical issues.
Amber	Moderately constrained Option. Likely viable however, may have to overcome some environmental issues.	Moderately constrained Option. Likely viable however, may have to overcome some social/community issues.	Moderately constrained Option. Likely viable however, may have to overcome some planning/consenting or technical issues.
Green	Lightly constrained Option. Likely viable without any major environmental issues.	Lightly constrained Option. Likely viable without any major social/community issues.	Lightly constrained Option. Likely viable without any major planning/consenting or technical issues.

Appendix D - Plans and Programmes



Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
International / European			
Biodiversity			
UN Convention on Biological Diversity (1992)	Maintenance and enhancement of Biodiversity, and strategies to ensure a fair and equitable sharing of the benefits from the use of genetic resources.	• Conservation of biological diversity (or biodiversity); • Sustainable use of its components; • Fair and equitable sharing of benefits rising from genetic resources: and • Development of national strategies for the conservation and sustainable use of biological diversity.	The draft HND Implementation Plan should have regard for this Convention and look for opportunities to conserve, and, where possible, restore or enhance biodiversity. Environmental protection objectives of the Convention are reflected in the SEOs for Biodiversity, Flora and Fauna.
Kunming-Montreal Global Biodiversity Framework (GBF)	The Kunming-Montreal Global Biodiversity Framework (GBF) is an international agreement aimed at halting biodiversity loss and protecting the natural world. It sets out an ambitious roadmap for a world living in harmony with nature.	The framework includes four goals for 2050 and 23 targets for 2030. The four goals are to: • Protect and Restore: The integrity, connectivity and resilience of all ecosystems are maintained, enhanced, or restored, substantially increasing the area of natural ecosystems by 2050; Human induced extinction of known threatened species is halted, and, by 2050, the extinction rate and risk of all species are reduced tenfold and the abundance of native wild species is increased to healthy and resilient levels; The genetic diversity within populations of wild and domesticated	The draft HND Implementation Plan should have regard for this Framework and look for opportunities to conserve, and, where possible, restore or enhance biodiversity. Environmental protection objectives of the Convention are reflected in the SEOs for Biodiversity, Flora and Fauna.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		species, is maintained, safeguarding their adaptive potential. • Prosper with Nature: Biodiversity is sustainably used and managed and nature's contributions to people, including ecosystem functions and services, are valued, maintained and enhanced, with those currently in decline being restored, supporting the achievement of sustainable development for the benefit of present and future generations by 2050. • Share Benefits Fairly: The monetary and non-monetary benefits from the utilization of genetic resources and digital sequence information on genetic resources, and of traditional knowledge associated with genetic resources, as applicable, are shared fairly and equitably, including, as appropriate with indigenous peoples and local communities, and substantially increased by 2050, while ensuring traditional knowledge associated with genetic resources is appropriately protected, thereby contributing to the conservation and sustainable use of biodiversity, in accordance with internationally agreed access and benefit-sharing instruments. • Invest and Collaborate: Adequate means of implementation, including financial resources, capacity-building, technical and scientific cooperation, and access to and transfer of technology to fully implement the Kunming-	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		Montreal Global Biodiversity Framework are secured and equitably accessible to all Parties, especially developing country Parties, in particular the least developed countries and small island developing States, as well as countries with economies in transition, progressively closing the biodiversity finance gap of $700 billion per year, and aligning financial flows with the Kunming-Montreal Global Biodiversity Framework and the 2050 Vision for biodiversity. There are 23 global targets which are grouped into three key areas: • Reducing threats to biodiversity • Meeting people's needs through sustainable use and benefit-sharing • Tools and solutions for implementation and mainstreaming	
Ramsar Convention on Wetlands of International Importance (1971 and amendments)	Protection and conservation of wetlands.	Objectives include protection and conservation of wetlands, particularly those of importance to waterfowl as Waterfowl Habitat.	The draft HND Implementation Plan should ensure that European Sites, including a consideration of Ramsar sites, are suitably protected from loss or damage. Appropriate Assessment is being undertaken for the HND Implementation Plan, to ensure that its implementation will not adversely affect European Sites.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
			Environmental protection objectives of the Convention are reflected in the SEOs for Biodiversity, Flora and Fauna.
Bern Convention (Convention on European Wildlife and Natural Habitats) (1982)	The Bern Convention is a binding international legal instrument in the field of nature conservation, covering most of the natural heritage of the European continent and extending to some States of Africa.	• Objectives are to conserve wild flora and fauna and their natural habitats, as well as to promote European co-operation in this field. • The treaty also takes account of the impact that other policies may have on natural heritage.	The draft HND Implementation Plan should have regard for this Convention and look for opportunities to conserve, and, where possible, restore or enhance biodiversity. Environmental protection objectives of the Convention are reflected in the SEOs for Biodiversity, Flora and Fauna.
The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) (1992)	The current instrument guiding international cooperation on the protection of the marine environment of the North-East Atlantic. Objectives include the protection of the marine environment.	Prevention and elimination of pollution, and protection of the maritime area against the adverse effects of human activities, to safeguard human health and to conserve marine ecosystems.	The draft HND Implementation Plan should have regard for the Convention and ensure that it does not compromise its objectives, and that it contributes to achieving its aims. Environmental protection objectives of the Convention are reflected in the SEOs for Water.
Bonn Convention on the Conservation of Migratory Species of	The Bonn Convention focuses on preserving the habitats used by migratory species and aims to enhance the conservation of terrestrial, marine and avian	• Establishes a legal foundation for internationally coordinated conservation measures throughout a migratory range.	The draft HND Implementation Plan should have regard for any implications on migratory species.

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Wild Animals [L210, 19/07/1982 (1983)]	species on a global scale throughout their range.	• Migratory species threatened with extinction are listed on Appendix I of the Convention. Parties strive towards strictly protecting these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. • In Europe, legislation to ensure that the provisions of the Bonn convention are applied includes the Birds Directive and the Habitats Directive.	Environmental protection objectives of the Convention are reflected in the SEOs for Biodiversity, Flora and Fauna.
EU Biodiversity Strategy to 2030 [COM(2020)380]	Aims to put Europe's biodiversity on the path to recovery by 2030 for the benefit of people, climate and the planet. The Strategy aims to build societies' resilience to future threats such as the impacts of climate change, forest fires, food insecurity and disease outbreaks.	The strategy contains specific commitments and actions to be delivered by 2030: • Establishing a larger EU-wide network of protected areas on land and at sea. Enlarging of existing Natura 2000 areas with strict protection for areas of very high biodiversity and climate value. • Launching an EU nature restoration plan. Including concrete commitments and actions (and proposed binding nature restoration targets) to restore degraded ecosystems by 2030 and manage them sustainably, addressing the key drivers of biodiversity loss. • Introducing measures to enable the necessary transformative change. Unlocking funding for biodiversity, and setting in motion a new, strengthened governance framework.	The draft HND Implementation Plan should have regard for this strategy and look for opportunities to conserve, and, where possible, restore or enhance biodiversity. Environmental protection objectives of the strategy are reflected in the SEOs for Biodiversity, Flora and Fauna.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Introducing measures to tackle the global biodiversity challenge. In particular, working towards the adoption of an ambitious global biodiversity framework under the Convention on Biological Diversity.	
EU Directive on the conservation of wild birds (Birds Directive) [2009/147/EC]	Protects all wild birds, their nests, eggs and habitats within the European Community. It gives EU member states the power and responsibility to classify Special Protection Areas (SPAs) to protect birds which are rare or vulnerable in Europe, as well as all migratory birds which are regular visitors.	• Preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Annex I. • Preserve, maintain and establish biotopes and habitats to include the creation of protected areas (Special Protection Areas); ensure the upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones, re-establish destroyed biotopes and creation of biotopes • Measures for regularly occurring migratory species not listed in Annex I are required as regards their breeding, moulting and wintering areas and staging posts along their migration routes. The protection of wetlands, and particularly wetlands of international importance.	Environmental protection objectives of the Directive are reflected in the SEOs for Biodiversity, Flora and Fauna. The draft HND Implementation Plan should ensure that European Sites are suitably protected from loss or damage. Appropriate Assessment is being undertaken for the HND Implementation Plan, to ensure that its implementation will not adversely affect European Sites.
EU Directive on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) [92/43/EEC]	Builds on the Birds Directive (see above) by protecting natural habitats and other species of wild plants and animals. Together with the Birds Directive, it underpins a European network of protected	• Propose and protect sites of importance to habitats, plant and animal species. • Establish a network of Natura 2000 sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, to enable the natural habitat types and the species' habitats concerned to be maintained or, where	Environmental protection objectives of the Directive are reflected in the SEOs for Biodiversity, Flora and Fauna. The draft HND Implementation Plan should ensure that European Sites are suitably protected from loss or

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	areas known as Natura 2000: Special Protection Areas (SPAs, classified under the Birds Directive) and Special Areas of Conservation (SACs, classified under the Habitats Directive).	appropriate, restored at a favourable conservation status in their natural range. • Carry out a comprehensive assessment of habitat types and species present. • Establish a system of strict protection for the animal species and plant species listed in Annex IV.	damage. Appropriate Assessment is being undertaken for the HND Implementation Plan, to ensure that its implementation will not adversely affect European Sites.
Convention for the Conservation of Salmon in the North Atlantic	This Convention recognises that salmon originating in the rivers of different states intermingle in certain parts of the North Atlantic Ocean.	The key objectives of the Convention are the desire to promote the acquisition, analysis and dissemination of scientific information pertaining to salmon stocks in the North Atlantic Ocean and the desire to promote the conservation, restoration, enhancement and rational management of salmon stocks in the North Atlantic Ocean through international cooperation.	The draft HND Implementation Plan should contribute towards the achievement of the desires of the Convention and the Articles therein.
EU Common Fisheries Policy	This policy aims to ensure that fishing and aquaculture activities are managed in an environmentally sustainable way in the long-term, while supporting fishing communities in ensuring a fair standard of living and providing a healthy source of food at reasonable prices.	The key objectives of the EU Common Fisheries Policy are to: • Preserve stocks: Avoiding overfishing and ensuring fish stocks' reproductive capacity. • Conserve marine ecosystems: Preserving oceans, species and their habitats. • Keep the industry competitive: Enabling the conditions for a profitable fishing and aquaculture sector.	As an EU Member State when the Agreement was produced, the UK was subject to its obligations. Following Brexit, the UK ceased to be a part of the EU Common Fisheries Policy. However, this was automatically transferred into UK law on exit day, by virtue of The Common Fisheries Policy (Amendment etc.) (EU Exit) Regulations 2018.

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		• Share opportunities: Setting fair fishing quotas among EU countries.	The draft HND Implementation Plan should contribute towards the aims and objectives of the Policy.
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1975)	An international agreement between governments which aims to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.	CITES requires Parties to the Convention not to trade in listed species other than in accordance with the Convention, to take appropriate measures to enforce the Convention, to prohibit and penalise trade in violation of the Convention and to confiscate illegally traded specimens.	The draft HND Implementation Plan should account for the Convention and the Articles therein.
		Climate Change	
Paris Agreement (UNFCCC, 2016)	A legally binding international treaty on climate change, adopted by 196 parties at the UN Climate Change Conference (COP21) in December 2015. It aims to strengthen the global response to the threats of climate change by keeping this century's global temperature rise below 2 degrees Celsius above pre-industrial levels.	The Paris Agreement and the outcomes of the UN climate conference (COP21) cover all the crucial areas identified as essential for a landmark conclusion: • Mitigation – reducing emissions fast enough to achieve the temperature goal; • A transparency system and global stock-take – accounting for climate action; • Adaptation – strengthening ability of countries to deal with climate impacts; • Loss and damage – strengthening ability to recover from climate impacts; and • Support – including finance, for nations to build clean, resilient futures.	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The draft HND Implementation Plan should contribute to reducing GHG emissions by connecting offshore renewable energy generators to the system. Environmental protection objectives of the Agreement are reflected in the SEOs for Climatic Factors.

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UN Kyoto Protocol, the Doha Amendment, The United Nations Framework Convention on Climate Change (UNFCC, 1997)	The Framework Convention on Climate Change seeks to alleviate the impacts of climate change and reduce global emissions of GHGs. The Protocol operationalises this Convention. It was adopted in December 1997 and entered into force in February 2005.	• Commits industrialised countries and economies in transition to limit and reduce GHG emissions in accordance with agreed individual targets. • Places a heavier burden on developed countries under the principle of "common but differentiated responsibility and respective capabilities". • Annex B sets binding emission reduction targets for 37 industrialised countries and economies in transition and the EU. Overall, the targets for the first period (2008-2012) added up to an average 5% emission reduction compared to 1990 levels. • The Doha Amendment was adopted in December 2012 and entered into force in December 2020. This set a second period (2013-2020) with new commitments and a revised list of GHG to be reported.	The draft HND Implementation Plan can contribute to achieving emission reduction targets through facilitating the connection of offshore renewable energy generators to the system. Environmental protection objectives of the Protocol are reflected in the SEOs for Climatic Factors.
EU 20-20-20 Climate and Energy Package Agreement (2007)	Objectives seek to alleviate the impacts of climate change and reduce global emissions of GHGs.	To meet the EU's obligation under international law and in line with European ambition. Member States are required to: • 20% cut in GHG emissions collectively (from 1990 levels) • 20% of EU energy produced from renewables • 20% improvement in energy efficiency The collective EU target of reducing emissions by 20% by 2020 is to be achieved by: The EU Emissions Trading System, the backbone of the EU mitigation	As an EU Member State when the Agreement was produced, the UK was subject to its obligations. The more recent Energy Strategy for Great Britain (Powering Up Britain) sets out more stringent targets relating to GHG emissions and the energy sector. The draft HND Implementation Plan can contribute to achieving emission reduction targets through facilitating the

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		effort, which sets a cap on emissions from the most polluting sectors, including over 11 000 factories, power plants and other installations, including airlines. By 2020, the cap should result in a 21 % reduction relative to 2005 levels. The EU ETS covers about 40 % of all EU emissions. The 'effort sharing decision', which operates outside the EU ETS and establishes annual binding GHG emission targets for individual Member States for the 2013-2020 period. These concern emissions from sectors such as waste, agriculture, buildings, etc. The '20-20-20' targets are supported by the long-term target of 85-90 % reduction in GHG emissions against 1990 levels by 2050.	connection of offshore renewable energy generators to the system. Environmental protection objectives of the Agreement are reflected in the SEOs for Climatic Factors.
The European Green Deal 2019	The European Green Deal is a plan to make the EU's economy sustainable.	The growth strategy outlines transformation of the EU to a resource-efficient and competitive economy where: • There are no net emissions of GHGs by 2050; • Economic growth is decoupled from resource use; and • No person and no place is left behind. • The Deal provides an Action Plan to: • Boost the efficient use of resources by moving to a clean circular economy; and • Restore biodiversity and cut pollution.	As an EU Member State when the strategy was produced, the UK was subject to its obligations. The Climate Change Act 2008 (England) and Amendments, Climate Change (Scotland) Act 2009 and Amendments, and the Climate Change (Wales) Regulations 2021 and Amendments set a legal framework for a net zero target of GHG emissions by 2050 from baseline levels. The draft HND Implementation Plan can contribute to achieving emission reduction targets through connection of

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			offshore renewable energy generators to the system. Environmental protection objectives of the strategy are reflected in the SEOs for Climatic Factors.
Renewable Energy Directive (2009/28/EC)	This Directive establishes a common framework for the use of energy from renewable sources in order to limit greenhouse gas emissions and to promote cleaner transport. The Member States are to establish national action plans which set the share of energy from renewable sources consumed in transport, as well as in the production of electricity and heating, for 2020.	It requires the EU to fulfil at least 20% of its total energy needs with renewable by 2020 – to be achieved through the attainment of individual national targets. All EU countries must also ensure that at least 10% of their transport fuels come from renewable sources by 2020.	The draft HND Implementation Plan can contribute to achieving renewable energy targets through facilitating the connection of offshore renewable energy generators to the system. Environmental protection objectives of the Directive are reflected in the SEOs for Climatic Factors and Material Assets.
EU Strategy on Adaptation to Climate Change	The Adaptation Strategy recognise how important impact assessment is for climate proofing, identifies the key priorities for action and how EU policies can encourage effective adaptation action.	The strategy was adopted by the EC in April 2013. It outlines the measures for taking climate change preparedness to a new level. The strategy has three main objectives: • Promote climate action in Member States through encouraging the adoption of adaptation strategies; • The promotion of informed decision-making through addressing knowledge gaps and the	As an EU Member State when the strategy was produced, the UK was subject to its obligations. The Climate Change Adaption Plans for England, Wales and Scotland outline the risks and opportunities relevant to the respective country, as identified in the UK Climate Change Risk Assessment 2022.

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		development of the European Climate Adaptation Platform for better knowledge dissemination; and • Promoting adaptation in key vulnerable sectors.	The draft HND Implementation Plan should aim to contribute towards climate change mitigation and infrastructure to be planned for and resilient to climatic change.
Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change 2021[COM(2021)82]	The Strategy outlines a long-term vision for the EU to become a climate-resilient society, fully adapted to the unavoidable impacts of climate change by 2050 and complements the EU's goal of becoming climate neutral by this date. Deepens and expands upon adaptation actions in the 2013 EU Adaptation Strategy.	This strategy aims to reinforce the adaptive capacity of the EU and the world, and minimise vulnerability to the impacts of climate change, in line with the Paris Agreement and the proposal for European Climate Law. It seeks to step up action across the economy and society in synergy with other Green Deal policies such as biodiversity protection and sustainable agriculture. The Strategy has three objectives, and proposes a range of actions in order to meet them: • To make adaptation smarter - improving knowledge and availability of data, while managing the inherent uncertainty brought upon us by climate change; securing more and better data on climate-related risk and losses; and making Climate-ADAPT the authoritative European platform for adaptation knowledge. • To make adaptation more systemic - supporting policy development at all levels of governance, society and the economy and in all sectors by improving adaptation strategies and plans; integrating climate resilience in macro-fiscal	As an EU Member State when the strategy was produced, the UK was subject to its obligations. The Climate Change Adaption Plans for England, Wales and Scotland outline the risks and opportunities relevant to the respective country, as identified in the UK Climate Change Risk Assessment 2022. The draft HND Implementation Plan should aim to contribute towards climate change mitigation and infrastructure to be planned for and resilient to climatic change.

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		policy and promoting nature-based solutions for adaptation. • To speed up adaptation across the board – by accelerating development and rollout of adaptation solutions; reducing climate-related risk; closing the climate protection gap; and ensuring the availability and sustainability of fresh water.	
Second European Climate Change Programme (ECCP II) 2005.	Objectives seek to develop the necessary elements of a strategy to implement the Kyoto protocol.	Develop a framework for a low carbon economy which will be achieved through a National Mitigation Plan (to lower GHG emissions) and a National Adaptation Framework (to provide for responses to changes caused by climate change). This includes: • Reform of the EU Emissions Trading System (EU ETS) to include a cap on emission allowances in addition to existing system of national caps • Agreement of national targets for non-EU ETS emissions from countries outside the EU • Commitment to meet the national renewable energy targets of 16% for Ireland by 2020 • Preparation of a legal framework for technologies in carbon capture and storage	The draft HND Implementation Plan will need to have regard for this programme in the planning of offshore renewable infrastructure. The draft HND Implementation Plan can contribute towards climate change mitigation though connection of offshore renewable energy generators to the system.
EU Green Infrastructure Strategy (COM(2013) 249 final).	Aims to develop preserve and enhance healthy green infrastructure to help stop the loss of biodiversity and enable	The Green Infrastructure strategy is a key step towards the success of the EU Biodiversity Strategy. It is made up of four main elements:	The draft HND Implementation Plan will need to have regard for this strategy in regard to the development of green infrastructure

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	ecosystems to deliver their many services to people and nature. The greater the scale, coherence and connectivity of the green infrastructure network, the greater its benefits. The EU Strategy on green infrastructure aims to outline how to deploy such a network and encourages action at all levels.	• Promoting Green Infrastructure in the main EU policy areas • Supporting EU-level GI projects • Improving access to finance for GI projects • Improving information and promoting innovation.	as part of offshore and onshore cable, and onshore substation/converter station developments.
		Air Quality	
Stockholm Convention (2004)	The Stockholm Convention is an international treaty with the aim of eliminating or restricting the production and use of persistent organic pollutants (POPs).	The main objective of the treaty is in seeking to protect human health and the environment from POPs.	The draft HND Implementation Plan will need to have regard for this Convention with regard to the potential for cumulative emission effects.
WHO Air Quality Guidelines – global update (2005).	Objectives seek the elimination or minimisation of certain airborne pollutants for the protection of human health.	• Air Quality Guidelines (AQGs) were published by the WHO in 1987 and revised in 1997 and most recently in 2005. • These offer guidance on threshold limits for key air pollutants that pose health risks and provide a reference for setting air pollution targets at regional and national levels to improve air quality. • The 2005 guidelines offer recommended exposure levels for particulate matter (PM10 and	The draft HND Implementation Plan should have regard for the environmental protection objectives of these guidelines, in terms of cumulative emissions affecting air quality from the energy supply sector and other sources. The draft HND Implementation Plan may be able to contribute to reducing air emissions by facilitating connecting

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		PM2.5), ozone, nitrogen dioxide and sulphur dioxide, as well as a set of interim targets to encourage a progressive improvement in air quality.	offshore renewable energy generators to the system.
The Gothenburg Protocol (1999), as amended in 2012.	The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) is a multi-pollutant protocol designed to reduce acidification, eutrophication and ground-level ozone by setting emissions ceilings for sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia to be met by 2010. The protocol was updated and amended in 2012.	• The 1999 Protocol set national emission ceilings for 2010 for four pollutants: sulphur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds (VOCs) and ammonia (NH_3). • As amended in 2012, the Protocol includes national emission reduction commitments to be achieved by 2020 and beyond • Parties must report on their emissions annually and are required to provide projections of their future emissions.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Protocol, relating to the control of emissions from construction. The draft HND Implementation Plan may be able to contribute to reducing air emissions by facilitating connecting offshore renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality.
Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive [2008/50/EC] & 4th Daughter Directive of the Air Quality Framework Directive [2004/107/EC]	Set air quality standards for protection of human health and the environment. Addresses air pollution at the level of zones, while the complementary NEC Directive addresses total emissions.	• The Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC) was published in May 2008. It replaced the Framework Directive and the first, second and third Daughter Directives. • Sets limit and target values for certain pollutants. Covers in particular nitrogen dioxide (NO2) and particulate matter or fine dust (PM10), which is emitted by traffic and combustion engines.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Directives, relating to the control of emissions from construction. The draft HND Implementation Plan will be obliged to comply with air quality standards set out in these Directives and has potential to contribute to reducing air emissions by facilitating

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Lays down limit values to be respected by Member States in their zones. • The 4th Daughter Directive relates to arsenic cadmium, mercury, nickel and polycyclic aromatic hydrocarbons.	connecting renewable offshore renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality.
Industrial Emissions Directive [2010/75/EU]	Aims to achieve a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques (BAT) Around 50,000 installations undertaking the industrial activities listed in Annex I of the Industrial Emissions Directive (IED) are required to operate in accordance with a permit (granted by the authorities in Member States).	The IED is based on several pillars, in particular (1) an integrated approach, (2) use of best available techniques, (3) flexibility, (4) inspections and (5) public participation: • The integrated approach means that the permits must take into account the whole environmental performance of the plant. • The permit conditions including emission limit values must be based on the Best Available Techniques (BAT). • The IED allows competent authorities some flexibility to set less strict emission limit values. • The IED contains mandatory requirements on environmental inspections. Member States shall set up a system of environmental inspection and draw up inspection plans accordingly. • The IED ensures that the public has a right to participate in the decision-making process, and be informed of its consequences, by having	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Directive, which includes protection from emissions from certain power plants, in terms of cumulative emissions affecting air quality.

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		access to permit applications, permits and the results of the monitoring releases.	
National Emissions reduction Commitments (NEC) Directive [2016/2284/EU]	This Directive seeks to limit the national emissions of certain airborne pollutants for the protection of human health and the environment. Implements at the EU level obligations under the Geneva Convention and Gothenburg Protocol. It replaced the earlier National Emission Ceilings for Certain Atmospheric Pollutants Directive (2001/81/EC).	It sets the limits on total national emissions from four pollutants - sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia. These can cause acidification (e.g., the chemical composition of the sea acidifies), water and soil pollution (eutrophication) and ground-level ozone (ozone resulting from the reaction of the four pollutants with heat and sunlight).	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Directive, relating to the control of emissions from construction. The draft HND Implementation Plan should, where possible, contribute to the protection of air quality. Connection of offshore renewable energy infrastructure could contribute to reducing national emissions. These environmental protection objectives are reflected in the SEOs for Air Quality and Climatic Factors.
Geneva Convention (1979) on Long-range Transboundary Air Pollution (LRTAP)	International agreement with the aim of limiting problems of air pollution on a broad regional basis.	• First international legally binding instrument dealing with problems of air pollution on a broad regional basis. It was signed in 1979 and entered into force in 1983. It has since been extended by eight specific protocols. • Under the Convention, the parties commit to working together to limit, to gradually prevent, and to reduce their discharges of air pollutants in order to combat the resulting transboundary pollution.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Directive, relating to the control of emissions from construction. Environmental protection objectives of the Convention are reflected in the SEOs for Air Quality and Climatic Factors.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• The Convention has substantially contributed to the development of international environmental law and has created the essential framework for controlling and reducing the damage to human health and the environment caused by transboundary air pollution.	
		Sustainable Development	
Eighth Environmental Action Programme to 2030 of the European Community	The Programme guides European environment policy until 2030, and sets out a vision beyond that, of where it wants the EU to be by 2050.	Objectives seek to make the future development of the EU more sustainable. It identifies the long-term priority objective that, by 2050 at the latest, Europeans live well, within planetary boundaries and in a well-being economy where nothing is wasted. Growth will be regenerative, climate neutrality will be a reality, and inequalities will have been significantly reduced. It also identifies six priority objectives to 2030: • achieving the 2030 greenhouse gas emission reduction target and climate neutrality by 2050 • enhancing adaptive capacity, strengthening **resilience** and **reducing vulnerability to climate change** • advancing towards a **regenerative growth model**, decoupling economic growth from resource use and environmental degradation, and accelerating the transition to a circular economy	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Programme in the planning of offshore and onshore infrastructure.

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		• pursuing a zero-pollution ambition, including for air, water and soil and protecting the health and well-being of Europeans • protecting, preserving and restoring biodiversity, and **enhancing natural capital** • **reducing environmental and climate pressures** related to production and consumption (particularly in the areas of energy, industry, buildings and infrastructure, mobility, tourism, international trade and the food system)	
EUROPE 2020 A strategy for smart, sustainable and inclusive growth (COM/2010/2020)	Europe 2020 is a 10-year growth strategy proposed by the EC in 2010 for advancement of the EU economy. It aims at "smart, sustainable, inclusive growth", with greater coordination of national and European policy. It follows the Lisbon Strategy for the period 2000–2010.	The Strategy set five overarching objectives to be reached by 2020: • Employment: 75% of population aged 20-64 should be employed; • Innovation: 3% EU's GDP should be invested in R&D; • Climate Change: 20/20/20 climate/energy targets should be met (including an increase to 30% of emissions reduction if conditions are right); • Education: Share of early school leavers should be under 10% and at least over 40% of the younger generation should have a tertiary degree; and	Environmental protection objectives of the HND Implementation Plan, with regard to climate change objectives, are reflected in the SEO for Climatic Factors.

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		• Poverty: At least 20m fewer people in at-risk-of-poverty and social exclusion.	
Roadmap to a Resource Efficient Europe (COM(2011) 571)	Outlines how to transform the EU economy to a sustainable one by 2050. It proposes ways to increase resource productivity and decouple economic growth from resource use and its environmental impact. It sets out a vision for the structural and technological change needed up to 2050, with milestones to be reached by 2020. These milestones illustrate what will be needed to put Europe on a path to resource efficient and sustainable growth.	• Areas where policy action can make a real difference are a particular focus, and specific bottlenecks like inconsistencies in policy and market failures are tackled to ensure that policies are all going in the same direction. • Cross-cutting themes such as addressing prices that do not reflect the real costs of resource use and the need for more long-term innovative thinking are also in the spotlight. • Key resources are analysed from a lifecycle and value-chain perspective. Nutrition, housing and mobility are the sectors responsible for most environmental impacts; actions in these areas are being proposed to complement existing measures.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this roadmap in planning for transmission infrastructure for offshore renewables and should contribute to achieving renewable energy targets.
SEA Directive [2001/42/EC]	To provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.	• Requires that Plans and Programmes take into account protection of the environment and integration of the Plan into the sustainable planning of the country as a whole. • Eleven sectors are specified in the Directive and Competent Authorities (Plan/ Programme makers) must subject specific Plans and Programmes for these sectors to an	The draft HND Implementation Plan will be subject to the SEA process. This is being undertaken through this SEA Scoping Report and subsequent Environmental Report.

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		environmental assessment where they are likely to have significant effects on the environment.	
UN Convention on Environmental Impact Assessment (ESPOO Convention) and Kyiv (SEA) Protocol	The Espoo (EIA) Convention sets out the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. The Kyiv (SEA) Protocol, requires its Parties to evaluate the environmental consequences of their official draft plans and programmes.	• The Espoo Convention is intended to help make development sustainable by promoting international cooperation in assessing the likely impact of a proposed activity on the environment. The objective of the Kyiv Protocol is to provide for a high level of protection of the environment, including health.	The draft HND Implementation Plan will have regard for the Espoo Convention by having regard for the EIA Directive as outlined above. The draft HND Implementation Plan will be subject to the SEA process. This is being undertaken through this SEA Scoping Report and subsequent Environmental Report.
EIA Directive [85/337/EEC] [2014/52/EU]	The objective of this Directive is to require Environmental Impact Assessment of the environmental effects of those public and private projects, which are likely to have significant effects on the environment. Aims to assess and implement avoidance or mitigation measures to eliminate environmental effects, before consent is given of projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location. Projects of this type	• All projects listed in Annex I are considered as having significant effects on the environment and compulsorily require an EIA. • For projects listed in Annex II, a "screening procedure" is required to determine the effects of projects on the basis of thresholds/criteria or a case-by-case examination. The competent authority may give a decision on whether a project requires EIA. • Requirement for identification, description and assessment in an appropriate manner, in the light of each individual case, on the direct and indirect effects of a project on the following factors: human beings, fauna and flora, soil, water, air, climate and the landscape, material assets,	The draft HND Implementation Plan will have regard to the EIA Directive in the development of any offshore or onshore infrastructure. Development and operation of projects may be subject to EIA.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	are subject to a requirement for development consent and an assessment with regard to their effects.	cultural heritage, and the interactions between these factors. • Requirement for consultation with relevant authorities, stakeholders and the public, allowing sufficient time for these to make a submission before a decision is made. • Establishment of a recognised structure and content for the Environmental Impact Statement, which is the document submitted as a written account of the EIA. • Inclusion of proposed flood risk management schemes in EIA screening process	
Energy Efficiency Directive [2012/27/EU]	European Union directive which mandates energy efficiency improvements within the European Union.	The aim of the EU Energy Efficiency Directive was to save energy and to reach the EU's energy savings targets: • By 2020, a 20% cut in energy consumption, or in absolute terms -calculated in million tons of oil equivalent (Mtoe) - 1483 Mtoe in 2020 compared to projected consumption in that year of 1842 Mtoe for the EU as a whole. The Directive included a legal obligation to establish energy saving schemes in all Member States: energy distributors or retail energy sales companies were obliged to save 1.5 % of their energy sales annually, by volume, through the implementation of energy efficiency measures such as improving the efficiency of heating systems, installing double	The draft HND Implementation Plan will be obliged to comply with the requirements of this Directive. Development and operation of new offshore and onshore electricity infrastructure should contribute to improved energy efficiency.

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		glazed windows or insulating roofs, among final energy customers.	
UN 2030 Agenda for Sustainable Development	The UN 2030 Agenda envisages "a world of universal respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination". It is grounded in the Universal Declaration on Human Rights and international human rights treaties and emphasises the responsibilities of all states to respect, protect and promote human rights.	The Agenda's 17 Sustainable Development Goals (SDG), and their 169 targets, aim to: Eradicate poverty in all forms and "seek to realize the human rights of all and achieve gender equality".	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Agenda in the planning of offshore and onshore infrastructure. It should promote sustainable planning and management in the development and operation of this infrastructure.
		Water	
International Convention for the Prevention of Pollution from Ships (The MARPOL Convention)	The main international convention covering prevention of marine environment pollution by ships from operational or accidental causes.	The Convention includes regulations aimed at preventing and minimizing pollution from ships - both accidental pollution and that from routine operations. Six Annexes are currently included that cover: • Annex I Regulations for the Prevention of Pollution by Oil - Prevention of pollution by oil. • Annex II Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk - The discharge criteria and measures for the control	The draft HND Implementation Plan should have regard for the pollution prevention objectives of the Convention. Any vessels used for installation and transport of equipment or personnel may have the potential to pollute the marine environment. The plan should have regard for the pollution prevention aims of the regulations included in the Convention during

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		of pollution by 250-listed noxious liquid substances carried in bulk. • Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form - General requirements for the issuing of detailed standards on packing, marking, labelling, documentation, stowage, quantity limitations, exceptions and notifications of "harmful substances". • Annex IV Prevention of Pollution by Sewage from Ships - Requirements to control pollution of the sea by sewage. • Annex V Prevention of Pollution by Garbage from Ships - Different types of garbage and specifies the distances from land and the manner in which they may be disposed of. • Annex VI Prevention of Air Pollution from Ships - Limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone depleting substances.	the planning of infrastructure construction and installation. Environmental protection objectives of the Convention are reflected in the SEOs for Water.
UNCLOS (United Nations Convention on the Law of the Sea) 1982	UNCLOS is a comprehensive regime of law and order in the oceans and seas. It sets out the legal framework within which all ocean and sea activities must be carried out.	The objectives of UNCLOS are to: • Promote peaceful use of oceans and seas. • Facilitate International Communications.	The draft HND Implementation Plan should have regard for the ocean space governance objectives and laws of the Convention.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	The Convention contains 320 articles and nine annexes which govern all aspects of ocean space such as environmental control, delimitation, marine scientific research, transfer of technology. commercial and economic activities, and settlement of disputes relating to ocean matters.	• Enable equitable and efficient ocean resource utilisation. • Promote maritime safety.	The objectives of the Convention are reflected in the SEOs for Water.
European Integrated Maritime Policy 2007	The Integrated Maritime Policy (IMP) of the European Union (EU) is a holistic approach to all sea-related EU policies. It is a crucial policy framework aiming to foster the sustainable development of all sea-based activities and coastal regions by improving the coordination of policies affecting the oceans, seas, islands, coastal and outermost regions and maritime sectors, and by developing cross-cutting tools.	The main objectives and corresponding fields of action of the IMP are: • Maximising the sustainable use of the oceans and seas in order to enable the growth of maritime regions and coastal regions as regards shipping, seaports, shipbuilding, maritime jobs, the environment and fisheries management; • Building a knowledge and innovation base for maritime policy through a comprehensive European Strategy for Marine and Maritime Research (e.g. the Maritime Strategy Framework Directive (2008/56/EC) and the Horizon 2020 programme (2.4.5); • Improving the quality of life in coastal regions by encouraging coastal and maritime tourism, creating a Community Disaster Prevention	The draft HND Implementation Plan should have regard for the main objectives and actions of the IMP.

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		Strategy and developing the maritime potential of the EU's outermost regions and islands; • Promoting EU leadership in international maritime affairs through enhanced cooperation at the level of international ocean governance and, on a European scale, through the European Neighbourhood Policy (ENP) (5.5.5) and the Northern Dimension (5.5.3); • Raising the visibility of maritime Europe through the 'European Atlas of the Seas' internet application, as a means of highlighting the common European maritime heritage, and by celebrating an annual European Maritime Day on 20 May.	
Water Framework Directive (2000/60/EC), (as amended by Decision 2455/2001/EC and Directives 2008/32/EC, 2008/105/EC and 2009/31/EC.	Aims to improve water quality and quantity within rivers, estuaries, coasts and aquifers. Aims to prevent the deterioration of aquatic ecosystems and associated wetland by setting out a timetable until 2027 to achieve good ecological status or potential. Member States are required to manage the effects on the ecological quality of water which result from changes to	• Identification and establishment of individual river basin districts. • Preparation of individual river basin management plans for each of the catchments. These contain the main issues for the water environment and the actions needed to deal with them. • Establishment of a programme of monitoring water quality in each RBD. • Establishment of a Register of Protected Areas (includes areas previously designated under the Freshwater Fish and Shellfish Directives which have become sites designated for the protection	The draft HND Implementation Plan should have regard for the environmental protection objectives of the WFD in the planning of offshore and onshore infrastructure. It will need to consider the requirements of the WFD and ensure that it does not compromise its objectives, and that it contributes to achieving its aims. Environmental protection objectives of the Directive are reflected in the SEOs for Water and Biodiversity, Flora and Fauna.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	the physical characteristics of water bodies. Action is required in those cases where these "hydro-morphological" pressures are having an ecological impact which will interfere with the ability to achieve WFD objectives. The following Directives have been subsumed into the Water Framework Directive: • The Drinking Water Abstraction Directive • Sampling Drinking Water Directive • Exchange of Information on Quality of Surface Freshwater Directive • Shellfish Directive • Freshwater Fish Directive • Groundwater (Dangerous Substances) Directive • Dangerous substances Directive	of economically significant aquatic species under WFD and placed on the Protected Areas register). • Promotion of sustainable management of the water environment by carefully considering current land use and future climate scenarios, minimising the effects of flooding and drought events and facilitating long-term improvements in water quality, including the protection of groundwater near landfill sites, as well as minimising agricultural runoff.	

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Marine Strategy Framework Directive (2008/56/EC)	Establishes a framework whereby the necessary measures are undertaken to achieve or maintain good environmental status in the marine environment by the year 2020. Requires the development and implementation of marine strategies in order to protect and preserve the marine environment, prevent its deterioration or, where practicable, restore marine ecosystems in areas where they have been adversely affected. It aims to prevent and reduce inputs in the marine environment, with a view to phasing out pollution as defined in Article 3(8), so as to ensure that there are no significant impacts on or risks to marine biodiversity, marine ecosystems, human health or legitimate uses of the sea.	• Preparation of an assessment of the current environmental status of the waters concerned and the environmental impact of human activities. • Establishment of a series of environmental targets and associated indicators. • Development of a programme of measures designed to achieve or maintain good environmental status, by 2020. • Establishment of a monitoring programme for ongoing assessment and regular updating of targets. • Cooperation with transboundary Member States to implement these measures.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the MSFD in the planning of infrastructure. The draft HND Implementation Plan could have implications on the environmental status of marine waters. Development and operation of infrastructure should aim to avoid impacts on the marine environment. Environmental protection objectives of the Directive are reflected in the SEOs for Water.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Floods Directive (2007/60/EC)	This Directive provides a framework for the assessment and management of flood risks, aiming to reduce the adverse consequences associated with flooding for human health, the environment, cultural heritage and economic activity.	Member States must: • Assess the risk of flooding of all water courses and coastlines, • Map the flood extent and assets and humans at risk in these areas at River Basin level and in areas covered by Article 5(1) and 13(1); and • Implement flood risk management plans and take adequate and coordinated measures to reduce this flood risk. Member States are required to first carry out a preliminary assessment by 2011 to identify the river basins and associated coastal areas at risk of flooding. For such zones they would then need to draw up flood risk maps by 2013 and establish flood risk management plans focused on prevention, protection and preparedness by the end of 2015. The public must be informed and allowed to participate in the planning process.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Floods Directive in the planning onshore infrastructure.
Bathing Water Directive (2006/7/EC)	The overall objective of the revised Bathing Water Directive remains the protection of public health whilst bathing. It: • Imposes stricter standards for water quality and the implementation of new method of assessment.	• Updates the way in which water quality is measured, focusing on fewer microbiological indicators, and setting different standards for inland and coastal bathing sites. • Reduces the health risks linked to bathing by setting scientifically based minimum water quality standards.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Directive in the planning of infrastructure, relating to the potential for cumulative effects on waters used for recreation. Development and operation of transmission infrastructure should

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	• Establishes a more pro-active approach to the assessment of possible pollution risks, and to the management of bathing waters; and Places considerable emphasis on promoting increased public involvement, and for improved dissemination of information on bathing water quality to the general public.	• Makes changes to monitoring and sampling frequency. • Allows a limited number of water samples to be disregarded during short-term pollution incidents, if the event is predicted and the public warned beforehand. • Provides better information to the public, allowing more informed choices to be made about the risk of bathing. • Improves the overall management of bathing water quality by requiring an assessment of potential sources of pollution. • Is compatible with other EU water related legislation, in particular the Water Framework Directive.	not negatively impact on designated bathing waters.
Environmental Quality Standards Directive (Directive 2008/105/EC) (also known as the Priority Substances Directive), as amended by Directive 2013/39/EU.	Establishes environmental quality standards (EQS) for priority substances and certain other pollutants as provided for in Article 16 of the Water Framework Directive and aims to achieve good surface water chemical status in accordance with the provisions and objectives of Article 4 of the Water Framework Directive.	• Apply the EQS laid down in Part A of Annex I to this Directive for bodies of surface water. • Determine the frequency of monitoring in biota and/or sediment of substances. • Monitoring shall take place at least once every year, unless technical knowledge and expert judgment justify another interval. • Notify the EC if the substances for which EQS have been established if a deviation of the monitoring	Impacts on water quality are of relevance to the HND Implementation Plan, as transmission development options have potential to be associated with pollution. Development and operation of transmission infrastructure should aim to not negatively impact on any environmental quality standards.

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		is planned along with the rationale and approach. • Establish an inventory, including maps, if available, of emissions, discharges and losses of all priority substances and pollutants listed in Part A of Annex I to this Directive for each river basin district.	
Environmental Liability Directive [2004/35/EC]	Establishes a framework for environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage. Relates to environmental damage caused by occupational activities (listed in Annex III), and to any imminent threat of such damage occurring by reason of any of those activities; damage to protected species and natural habitats caused by any occupational activities other than those listed in Annex III, and to any imminent threat of such damage occurring by reason of any of those activities, whenever the operator has been at fault or negligent.	• Describes procedures for circumstances where environmental damage has occurred. Requires the polluter to take all practicable steps to immediately control, contain, remove or otherwise manage the relevant contaminants and/or any other damage factors in order to limit or to prevent further environmental damage and adverse effects on human health or further impairment of services and the necessary remedial measures. • Establishes measures for cases where environmental damage has not yet occurred, but there is an imminent threat of such damage occurring. The regulations make the polluter financially liable and allow the competent authority to initiate cost recovery proceedings where appropriate.	The draft HND Implementation Plan will be obliged to comply with the requirements of the Directive and to prevent environmental damage. Development and operation of transmission infrastructure should aim to cause no damage to the wider environment.

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		Waste	
Waste Electrical and Electronic Equipment Directive [2002/96/EC], as recast by [201219/EU]	EU rules on waste electrical and electronic equipment (widely known as WEEE or e-waste) aim to contribute to sustainable production and consumption. They address environmental and other issues caused by the growing number of discarded electronics in the EU.	The WEEE Directive aims to contribute to sustainable production and consumption by: • preventing the creation of WEEE as a first priority • contributing to the efficient use of resources and the retrieval of secondary raw materials through re-use, recycling and other forms of recovery • improving the environmental performance of everyone involved in the life cycle of EEE In order to achieve these objectives, the Directive: • requires the separate collection and proper treatment of WEEE and sets targets for their collection as well as for their recovery and recycling • helps European countries fight illegal waste exports more effectively by making it harder for exporters to disguise illegal shipments of WEEE • reduces the administrative burden by calling for the harmonisation of national EEE registers and of the reporting format	The draft HND Implementation Plan should consider the implications of this Directive for developmental infrastructure options within the Plan that are likely to result in waste electrical equipment being generated.
Waste Framework Directive [2008/98/EC], as	Sets the basic concepts and definitions related to waste management, such as	The Directive requires that: • Waste is managed without endangering human health	The draft HND Implementation Plan will be obliged to comply with the requirements of the Directive in the

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amended in 2018 [2018/51/EU]	definitions of waste, recycling, recovery. Explains when waste ceases to be waste and becomes a secondary raw material (so called end-of-waste criteria), and how to distinguish between waste and by-products.	• Waste is managed without harming the environment. • Waste is managed without harming water, air, soil, plants or animals. Waste does not cause a nuisance a nuisance through noise or odours, or to countryside or places of special interest.	management of waste arising from onshore and offshore developments.
		Cultural Heritage	
Valletta Convention (1992)	Convention for the Protection of the Archaeological Heritage of Europe (revised) (Valletta, 1992). The Valletta Treaty aims to protect the European archaeological heritage "as a source of European collective memory and as an instrument for historical and scientific study	Sets guidelines for the funding of excavation and research work and publication of research findings. Deals with public access, in particular to archaeological sites, and educational actions to be undertaken to develop public awareness of the value of the archaeological heritage. The Convention constitutes an institutional framework for pan-European co-operation on the archaeological heritage, entailing a systematic exchange of experience and experts among the various States. The Committee responsible for monitoring the application of the Convention assumes the role of strengthening and co-ordinating archaeological heritage policies in Europe.	The draft HND Implementation Plan should consider sites of archaeological heritage and ensure that they are protected from loss or damage resulting from the development of infrastructure. Environmental protection objectives of the Treaty are reflected in the SEO for Cultural Heritage.
Granada Treaty (1985)	Convention for the Protection of the Architectural Heritage of Europe (Granada, 1985). The main purpose of the	Conservation of European architectural heritage.	The draft HND Implementation Plan should consider sites of architectural heritage and ensure that they are protected from loss or

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	Convention is to reinforce and promote policies for the conservation and enhancement of Europe's heritage. It also affirms the need for European solidarity with regard to heritage conservation and is designed to foster practical co-operation among the Parties.		damage resulting from the development of infrastructure. Environmental protection objectives of the Treaty are reflected in the SEO for Cultural Heritage.
World Heritage Convention [WHC-2005/WS/02]	Objectives seek to ensure the identification, protection, conservation, presentation and transmission to future generations of cultural and natural heritage and ensure that effective and active measures are taken for these. The Convention recognises the way in which people interact with nature and encourages signatories to integrate the protection of cultural and natural heritage into regional planning programmes, set up staff and services at their sites, undertake scientific and technical conservation research and adopt measures	• Establishment of measures for the protection of monuments of national importance by virtue of the historical, architectural, traditional, artistic or archaeological interest attaching to them. Includes the site of the monument, the means of access to it and any land required to preserve the monument from injury or to preserve its amenities.	The draft HND Implementation Plan should consider sites of archaeological, architectural, cultural and natural heritage and ensure they are protected from loss or damage resulting from the development of infrastructure. Environmental protection objectives of the Treaty are reflected in the SEO for Cultural Heritage.

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	which give this heritage a function in the day-to-day life of the community.		
		Landscape	
European Landscape Convention [ETS No. 176]	Promotion of the protection, management and planning of European landscapes and organising European co-operation on landscape issues. Applies to the entire territory of the Parties and covers natural, rural, urban and peri-urban areas. Inclusion of landscapes that might be considered outstanding as well as everyday or degraded landscapes. Aimed at the protection, management and planning of all landscapes and raising awareness of the value of a living landscape. Complements the Council of Europe's and UNESCO's heritage conventions.	• Respond to the public's wish to enjoy high-quality landscapes and to play an active part in the development of landscapes. • Each administrative level (national, regional and local) should draw up specific and/or sectoral landscape strategies within the limits of its competences. These are based on the resources and institutions which, when co-ordinated in terms of space and time, allow policy implementation to be programmed. The various strategies should be linked by landscape quality objectives.	The draft HND Implementation Plan could potentially have implications on landscapes, seascapes and visual amenity. Infrastructure should be planned to avoid sensitive landscapes. Environmental protection objectives of the Treaty are reflected in the SEO for Landscape and Visual Amenity.

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		National	
		Biodiversity	
Biodiversity 2020: A strategy for England's wildlife and ecosystem services	A strategy for England to meet its international obligations and local targets to protect biodiversity	There are four central indicator themes to help assess progress with the strategy Biodiversity 2020. 1. A more integrated, large-scale approach to conservation on land and at sea. 2. Putting people at the heart of biodiversity policy. 3. Reducing environmental pressures Enhance the benefits to all from biodiversity and ecosystem services. 4. Improving knowledge	The draft HND Implementation Plan should look for opportunities to conserve, and where possible, restore biodiversity. Environmental protection objectives of the strategy are reflected in the SEOs for Biodiversity, Flora and Fauna.
Scottish Biodiversity Strategy to 2045: Tackling the Nature Emergency in Scotland	A strategy for Scotland to be Nature Positive by 2030 and to have regenerated and restored biodiversity by 2045.	The strategy includes 26 Priority Actions which will aim to halt the loss of Biodiversity and make Scotland Nature Positive by 2030 through a number of objectives. 1. Accelerate ecosystem restoration and regeneration 2. Protect nature on land and at sea, across and beyond protected areas 3. Embed Nature Positive farming, fishing and forestry 4. Protect and support the recovery of vulnerable and important species and habitats	The draft HND Implementation Plan should look for opportunities to conserve, and where possible, restore biodiversity. Environmental protection objectives of the strategy are reflected in the SEOs for Biodiversity, Flora and Fauna.

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		5. Invest in nature 6. Take action on the indirect drivers of biodiversity loss	
Scottish Biodiversity Delivery Plan 2024–2030	The first in a series of rolling delivery plans which form part of the strategic framework for biodiversity, in conjunction with the Scottish Biodiversity Strategy. Priority Actions are grouped within the Strategy's six objectives.	There are six objectives set out in this Strategy: 1. Accelerate ecosystem restoration and regeneration 2. Protect nature on land and at sea, across and beyond protected areas 3. Embed Nature Positive farming, fishing and forestry 4. Protect and support the recovery of vulnerable and important species and habitats 5. Invest in nature 6. Take action on the indirect drivers of biodiversity loss	The draft HND Implementation Plan should look for opportunities to conserve, and where possible, restore biodiversity. Environmental protection objectives of the strategy are reflected in the SEOs for Biodiversity, Flora and Fauna.
The Nature Recovery Action Plan for Wales: Our Strategy for Nature, 2015	This Nature Recovery Plan aims to address the underlying causes of biodiversity loss in Wales from 2020 onwards.	The plan consists of three parts: Part 1: The Strategy for Nature sets out the commitment to biodiversity in Wales, the issues needed to be addressed, and objectives for action. It sets out how current and proposed action, particularly through the Well-being of Future Generations (Wales) Act 2015, and through the Sustainable Management of Natural Resources, will	The draft HND Implementation Plan should look for opportunities to conserve, and where possible, restore biodiversity. Environmental protection objectives of the strategy are reflected in the SEOs for Biodiversity, Flora and Fauna.

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		contribute to reversing the loss of biodiversity in Wales. Part 2: The Action Plan sets out those actions which have been specifically identified to meet the objectives to reverse the decline of biodiversity. Part 3: The Nature Recovery Framework, in development, will show the governance structure for the Nature Recovery Plan, and the roles and responsibilities of everybody involved in the delivery of action for biodiversity in Wales. It will also define the accountability measures in place to ensure delivery.	
The Nature Recovery Action Plan for Wales 2020 – 21: Our Action Plan	The Nature Recovery Action Plan sets out how the United Nations Environment Programme's Convention on Biological Diversity's (CBD) Strategic Plan for Biodiversity and the associated Aichi Biodiversity Targets for 2011-20 in Wales would be addressed and is the National Biodiversity Strategy and Action Plan for Wales under Aichi target 17.	Action Plans are split into Themes for Action: 1. Maintaining and Enhancing Resilient Ecological Networks (nature networks) 2. Increasing Knowledge and Knowledge Transfer 3. Realising new Investment and Funding 4. Upskilling and capacity for delivery 5. Governance, Mainstreaming and Reporting our Progress	The draft HND Implementation Plan should look for opportunities to conserve, and where possible, restore biodiversity. Environmental protection objectives of the strategy are reflected in the SEOs for Biodiversity, Flora and Fauna.
Vital nature: Making the connections between biodiversity and the people and	A strategic policy document for Natural Resources Wales, setting out high-level action	There are six areas for action within NRW's strategy: 1. Connecting people and biodiversity	The draft HND Implementation Plan should look for opportunities to conserve, and where possible, restore biodiversity.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
places of Wales. NRW's strategic steer for biodiversity to 2022	and commitments for biodiversity to 2022.	2. Embedding biodiversity into all NRW functions 3. Improving the approach to protected sites 4. Working with others to maintain/ enhance biodiversity 5. Having the right evidence to inform our work 6. Investing in the knowledge and skills of our staff	Environmental protection objectives of the strategy are reflected in the SEOs for Biodiversity, Flora and Fauna.
UK Post-2020 Biodiversity Framework	Succeeds the UK Biodiversity Action Plan and 'conserving Biodiversity – the UK Approach'. Sets out the UK's response to the CBD's 'Strategic Plan for Biodiversity 2011-2020' and its 20 'Aichi Targets' (2010), and the EU Biodiversity Strategy (2011).	The Framework demonstrates how the work of the four countries and the UK contributes to achieving the Aichi Targets, and identifies the activities required to complement the country biodiversity strategies in achieving the Targets. The following are the Strategic Goals of the Framework: • Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society; • Reduce the direct pressures on biodiversity and promote sustainable use; • To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity; • Enhance the benefits to all from biodiversity and ecosystems; and	The draft HND Implementation Plan should look for opportunities to conserve, and where possible, restore biodiversity. Environmental protection objectives of the framework are reflected in the SEOs for Biodiversity, Flora and Fauna.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Enhance implementation through participatory planning, knowledge management and capacity building	
The UK's National Biodiversity Strategy and Action Plan for 2030	This strategy outlines the United Kingdom's response to the Kunming-Montréal Global Biodiversity Framework (GBF), which aims to halt and reverse biodiversity loss by 2030.	A central objective of the GBF is the protection and restoration of habitats, through new research, measures, public engagement and funding. It maintains flexibility to evolve with changing evidence and best-practice.	The draft HND Implementation Plan should ensure the protection, conservation and restoration of habitats.
The Biodiversity Gain Requirements (irreplaceable habitat) Regulations 2024 (SI 2024/48)	This Regulation defines and lists irreplaceable habitats for biodiversity gain.	This Regulation places a requirement for new developments to ensure a 10% net gain in biodiversity occurs which is maintained for at least 30 years to contribute to habitat recovery.	The draft HND Implementation Plan should have consideration for any irreplaceable habitats impacted by development and ensure the provision of biodiversity net gain as well as ensure the protection, conservation and restoration of habitats.
The Biodiversity Gain Requirements (Exemptions) Regulations	This regulation, which are only applicable in England, exempt certain developments from meeting the biodiversity gain requirements	This Regulation places temporary exemptions for small developments, for de minimis developments, households, for self-build and custom-building applications, biodiversity gain sites and for High Speed Railway Transport Network.	The draft HND Implementation Plan should have consideration of this Regulation during development.
The Environmental (Local Nature Recovery Strategies) Procedure Regulations 2023	This Regulation requires local nature recovery strategies to be implemented across all of England.	This Regulation requires a co-operative working towards achieving nature recovery with a focus on local stakeholders to achieve improvements in nature.	The draft HND Implementation Plan should have consideration of this Regulation during development.

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Schedule 7A (Biodiversity Gain for England) Town and Country Planning Act 1990	This Schedule was inserted to the Town and Country Planning Act 1990 by the Environment Act 2021.	This Schedule places a requirement for biodiversity net gain to be considered in planning practice guidance and distinguishes it from other or more general biodiversity gains.	The draft HND Implementation Plan should have consideration of this Schedule during planning and development.
The Conservation of Habitats and Species Regulations 2017	These Regulations consolidate the Conservation of Habitats and Species Regulations 2010 (S.I. 2010/490) and also implement aspects of the Marine and Coastal Access Act 2009 (c. 23) ("the Marine Act"). These Regulations extend to England and Wales. These Regulations give effect to Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and special areas of conservation (endangered species and habitats of endangered species). These sites, together with SPAs designated under the EU Directive on the Conservation of Wild Birds (EC/79/409), formed part of the	Protects certain birds, plants, animals, marine life and their habitats, including Natura 2000 sites, through creating criminal offences and changing planning requirements.	The draft HND Implementation Plan should ensure that European Sites are suitably protected from loss or damage. Appropriate Assessment and Marine Conservation Zone Assessment is being undertaken for the HND Implementation Plan, to ensure that its implementation will not adversely affect European Sites or MCZs. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna.

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	Natura 2000 network of protected sites. Following the UK's exit from the EU, there is now a UK National Site Network of European sites, comprising existing designated sites and any further sites designated under the Habitats Regulations.		
The Conservation of Habitats and Species Regulations 2010	These Regulations consolidate the Conservation (Natural Habitats, &c.) Regulations 1994 ("the 1994 Regulations"). They also implement aspects of the Marine and Coastal Access Act 2009 ("the Marine Act"). These Regulations extend to England and Wales (including the adjacent territorial sea). They also extend to Scotland (including the adjacent territorial sea) to a limited degree. These Regulations also transpose Council Directive 92/43/EEC on the conservation of natural habitats	Protects certain birds, plants, animals, marine life and their habitats, including Natura 2000 sites, through creating criminal offences and changing planning requirements	The draft HND Implementation Plan should ensure that European Sites are suitably protected from loss or damage. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna.

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	and of wild fauna and flora ("the Habitats Directive").		
The Conservation of Offshore Marine Habitats and Species Regulations 2017	These Regulations consolidate the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (S.I. 2007/1842) with subsequent amending instruments and make minor modifications reflecting changes to related legislation. The instruments being consolidated by these Regulations made, amongst things, provision for implementing Council Directive 2009/147/EC on the conservation of wild birds and Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora in relation to marine areas where the United Kingdom has jurisdiction beyond its territorial sea. The Regulations make provision in relation to the offshore marine area, offshore marine installations and certain ships and aircraft.	Protects certain offshore birds, plants, animals, marine life and their habitats, including European Protected Areas and European Protected Species, through creating criminal offences and changing planning requirements.	The draft HND Implementation Plan should ensure that European Sites are suitably protected from loss or damage. Appropriate Assessment is being undertaken for the HND Implementation Plan, to ensure that its implementation will not adversely affect European Sites. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)	These Regulations make provision for implementing Council Directive 92/43/EECon the conservation of natural habitats and of wild fauna and flora.	Protects certain birds, plants, animals, marine life and their habitats, including Natura 2000 sites, through creating criminal offences and changing planning requirements.	The draft HND Implementation Plan should ensure that European Sites are suitably protected from loss or damage. Appropriate Assessment is being undertaken for the HND Implementation Plan, to ensure that its implementation will not adversely affect European Sites. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna.
The Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019	These Regulations implement the species protection requirements of the Habitats Directive in Scotland. These apply on land and in Scotland's inshore waters (up to 12 nautical miles from land). Several amendments have been made to the 1994 Regulations, which apply only to Scotland.	Addition of the Eurasian Beaver to the list of European Protected Species of Animals that are given protection under the 1994 Regulations.	The draft HND Implementation Plan should ensure that European Sites are suitably protected from loss or damage. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna
Wildlife and Countryside Act 1981 (as amended)	Primary piece of legislation in England and Wales for protecting wildlife, includes lists of priority species specific to England, Wales and Scotland. Although Scotland has their	This legislation makes it an offence to deliberately take, kill or injure a protected wild animal, or to intentionally, or recklessly, disturb such an animal in its place of shelter, or to damage, destroy or obstruct access to its place of shelter. It is also an	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Act in the planning of offshore renewable infrastructure. The draft HND Implementation Plan will have a

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	own legislation for the protection of wildlife, there is some overlap.	offence to be in possession of a protected animal, live or dead	'Duty of Care' to conserve biodiversity. Environmental protection objectives of the Act are reflected in the SEOs for Biodiversity, Flora and Fauna.
Natural Environment and Rural Communities Act 2006	This Act reorganised public bodies in England involved in rural policy and delivery, the measures dissolved English Nature, the Countryside Agency and the Rural Development Service, and established Natural England.	Natural England's general purpose includes: 1. promoting nature conservation and protecting biodiversity, 2. conserving and enhancing the landscape, 3. securing the provision and improvement of facilities for the study, understanding and enjoyment of the natural environment, 4. promoting access to the countryside and open spaces and encouraging open-air recreation, and 5. contributing in other ways to social and economic well-being through management of the natural environment.	The draft HND Implementation Plan should look for opportunities to conserve, and where possible, restore biodiversity. Environmental protection objectives of the framework are reflected in the SEOs for Biodiversity, Flora and Fauna.
The Environment (Wales) Act 2016	This Act aims to promote sustainable management of natural resources.	The Act includes provisions in Section 73 to issue a site protection notice to ensure no harm is done to European Marine sites.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Act in the planning of offshore renewable infrastructure. The draft HND Implementation Plan will have a

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
			'Duty of Care' to conserve biodiversity. Environmental protection objectives of the Act are reflected in the SEOs for Biodiversity, Flora and Fauna.
Nature Conservation (Scotland) Act 2004 (as amended)	This Act makes amendments to the protection of wildlife under the Countryside and Wildlife Act 1981, and the Protection of Badgers Act 1992, in respect of Scotland.	Wild animal protection is extended to include reckless as well as intentional acts. The Act also makes it an offence to disturb or harass a dolphin, whale or basking shark, and amends the provisions for enforcement.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Act in the planning of offshore renewable infrastructure. The draft HND Implementation Plan will have a 'Duty of Care' to conserve biodiversity. Environmental protection objectives of the Act are reflected in the SEOs for Biodiversity, Flora and Fauna.
The Wildlife and Natural Environment (Scotland) Act 2011	This Act made changes to how the land and environment is managed and introduced new wildlife offences into Scotland such as vicarious liability.	Provisions included: 1. New regime for controlling invasive non-native species. 2. operational changes to how Sites of Special Scientific Interest are managed. Requirement of three-yearly reports to be published by public bodies on compliance with the Biodiversity Duty.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Act in the planning of offshore renewable infrastructure. The draft HND Implementation Plan will have a 'Duty of Care' to conserve biodiversity. Environmental protection objectives of the Act are reflected in the SEOs for Biodiversity, Flora and Fauna.

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Environmental Protection Act 1990	Act which covers England, Scotland and Wales and establishes legal responsibilities for waste management and control of emissions into the environment.	Businesses have a 'Duty of Care' under Section 34 to take responsibility of their waste from creation to disposal. This includes ensuring waste is stored securely, transported by licensed waste carriers, disposed of responsibly and maintaining detailed records.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Act and should ensure that the natural environment is suitably protected from loss or damage in its implementation.
Environmental Permitting Regulations 2016	These Regulations provide a consolidated system of environmental permitting in England and Wales. They replace the Environmental Permitting (England and Wales) Regulations 2010 (S.I. 2010/675).	Permits are provided through these regulations to industrial and waste installations which have the potential to cause harm to the environment and to human health. The main offences under these regulations are: • Operating a regulated facility without a permit. • Causing or knowingly permitting a water discharge activity or groundwater activity without a permit. • Failing to comply with a permit condition, flood risk activity emergency works notice, flood risk remediation notice or an enforcement-related notice.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these regulations and should ensure that the natural environment is suitably protected from loss or damage in its implementation.
Improvement programme for England's Natura 2000 sites (IPENS) Programme Report: a summary of the Programme Findings 2015	A programme to develop a strategic approach to achieving favourable condition for England's protected, European Natura 2000 sites.	The programme outlines a high-level plan which identifies solutions which can be used to manage issues which effect multiple sites. There are 11 issues identified within this plan: 1. atmospheric nitrogen 2. climate change	The draft HND Implementation Plan should ensure that European Sites are suitably protected from loss or damage. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		3. diffuse water pollution 4. grazing 5. habitat fragmentation 6. hydrological functioning 7. inappropriate coastal management 8. invasive species 9. lake restoration 10. public access and disturbance 11. river restoration	
Natural England Site Improvement Plans for Natura 2000 sites (SPAs and SACs)	Individual Management Plans for each SAC and SPA in England.	Each document describes the protected sites and conservation objectives for each sites qualifying features.	The draft HND Implementation Plan should take account of these advice packages ensure that European Sites are suitably protected from loss or damage. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna
NatureScot Conservation and Advice Packages (CAPs)	The Conservation Advice Packages (CAPs) for SACs include revised conservation objectives that have been written to comply with EU guidance and discussions with the Commission. Objectives are	These packages have been written by NatureScot to help owners and occupiers of these sites, competent and relevant authorities to achieve and maintain the conservation objectives of these sites	The draft HND Implementation Plan should take account of these advice packages ensure that European Sites are suitably protected from loss or damage.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	targeted for each feature on each SAC and include supplementary advice for each headline objective.		Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna
NatureScot Conservation and Management Advice documents (CMAs)	Similar to the Conservation Advice Packages above.	These documents: 1. Revise and update conservation objectives for the features of each site. 2. Clarify the essential site-specific elements needing to be in place in order for the conservation objectives to be achieved. This will assist competent authorities undertaking Habitat Regulations Appraisal (HRA) of projects and plans. 3. Advise on management needed to achieve the conservation objectives, identifying existing conservation measures, where further site-specific management may be required and, where appropriate, site-specific conservation measures.	The draft HND Implementation Plan should take account of these advice packages ensure that European Sites are suitably protected from loss or damage. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna
Natural Resources Wales / Countryside Council for Wales Core Management Plans for SACs & SPAs	Individual Management Plans for each SAC and SPA in Wales.	Each document describes the protected sites and conservation objectives for each sites qualifying features.	The draft HND Implementation Plan should take account of these advice packages ensure that European Sites are suitably protected from loss or damage.

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			Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna
UK National Ecosystem Assessment (2011)	Provides a comprehensive overview of the state of the natural environment in the UK and a new way of estimating our national wealth. England is covered in Chapter 17, Scotland in Chapter 19 and Wales in Chapter 20.	The assesses the state and value of the Uk's natural environment. Highlighting the importance of ecosystem services. Provides an evidence base for integrating environmental considerations into decision-making. Promotes interdisciplinary collaboration and raises public awareness.	The draft HND Implementation Plan should ensure that the natural environment is suitably protected from loss or damage in its implementation.
DEFRA Environmental Improvement Plan 2023: First revision of the 25-year environment plan.	The first revision of the 25-year environment plan above. The plan is revised every 5 years through a commitment set into law in the Environment Act 2021.	The plan sets out the progress made against all 10 goals, the targets and commitments made in relation to each goal. Outlines a plan to continue to deliver these targets and overarching goals.	The draft HND Implementation Plan should ensure that the natural environment is suitably protected from loss or damage in its implementation. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna
DEFRA A Green Future: Our 25 Year Plan to Improve the Environment	The 25 Year Environment Plan (25YEP) set out a vision for a quarter-of-a century of action in England to help the natural world regain and retain good health.	There are 10 environment goals within the plan: Goal 1: Thriving plants and wildlife Goal 2: Clean air Goal 3: Clean and plentiful water Goal 4: Managing exposure to chemicals and pesticides	The draft HND Implementation Plan should ensure that the natural environment is suitably protected from loss or damage in its implementation. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		Goal 5: Maximise our resources, minimise our waste Goal 6: Using resources from nature sustainably Goal 7: Mitigating and adapting to climate change Goal 8: Reduced risk of harm from environmental hazards Goal 9: Enhancing biosecurity Goal 10: Enhanced beauty, heritage, and engagement with the natural environment	
Natural England Action Plan 2024 to 2025	The plan sets out Natural England's key environmental goals for the year 2024-2025.	The key goals are to: 1. improve the condition of the core nature recovery network – our protected sites on land and sea 2. deliver local nature recovery strategies (LNRS) and work with partners to develop plans and projects to deliver LNRS ambitions for people and nature 3. target use of regulation and advice on land and sea to create new habitat and improve protected sites condition 4. green development and infrastructure 5. enable more people to connect with nature 6. develop and target delivery of farm advice 7. target monitoring to underpin delivery	The draft HND Implementation Plan should ensure that the natural environment is suitably protected from loss or damage in its implementation. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna

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		8. develop our capability in NE and focus on people's development and wellbeing	
IUCN UK Peatland Programme	This Programme was set up to promote peatland restoration in the UK.	This Programme aims to promote peatland restoration through a union-based approach, it aims to provide a focus for peatland research and management as well as highlight the benefits of a peatland ecosystem service.	The draft HND Implementation Plan should have regard for the Programme and its aims.
Making Space for Nature White Paper 2010	This was a review published for England's wildlife sites.	This independent review of England's wildlife sites included recommendations on how to achieve a healthy environment and formed 24 key actions and recommendations to achieve this.	The draft HND Implementation Plan should have regard for the review and its recommendations.
The Great Britain Invasive Non-native Species Strategy: 2022 to 2030	This framework identifies how to minimise the risks posed by invasive non-native species.	The framework sets out a strategy with aims and actions to address the threats from invasive non-native species, establish a framework to deliver the most effective response to preventing, eradicating and managing invasive non-native species through an overall co-ordinated approach between government, stakeholders and land managers.	The draft HND Implementation Plan should have regard for the framework and any requirements to control invasive non-native species during construction, operation and decommissioning.
England Species and Habitat Action Plans	Lists priority species and habitats of principal importance for protection in England.		The draft HND Implementation Plan should ensure that the natural environment and priority species and habitats are suitably protected from loss or damage in its implementation. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Scotland Species and Habitat Action Plans	Lists priority species and habitats of principal importance for protection in Scotland.		The draft HND Implementation Plan should ensure that the natural environment and priority species and habitats are suitably protected from loss or damage in its implementation. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna
Wales Species and Habitat Action Plans	Lists priority species and habitats of principal importance for protection in Wales.		The draft HND Implementation Plan should ensure that the natural environment and priority species and habitats are suitably protected from loss or damage in its implementation. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna
UK Fisheries Act 2020	Creates a legal requirement for the UK's four national fisheries policy authorities (Marine Management Organisation (MMO), Scottish Ministers, Welsh Ministers, and the Northern Ireland department) to produce a Joint Fisheries Statement (JFS) that will lay out how the objectives of the Act will be met.	There are eight Fisheries Objectives within the Act: 1. Sustainability 2. Precautionary 3. Ecosystem 4. Scientific Evidence 5. Bycatch	The draft HND Implementation Plan should have regard for the objectives of the Act and should ensure that fisheries are suitably protected from loss or damage in its implementation. Environmental protection objectives of the Regulations are reflected in

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		6. Equal Access 7. National Benefits 8. Climate Change	the SEOs for Biodiversity, Flora and Fauna
The Sea Fish (Specified Sea Area) (Regulation of Nets and Prohibition of Fishing Methods) Order 1989	This Order prohibits fishing for sea fish in a specified area by British fishing boats using gill and other specified nets of a stipulated mesh size and the carriage by those boats of such nets in that area.	The Regulations prohibit the fishing for sea fish by any British fishing boat with gill and other specified nets of a mesh size of at least 65 millimetres and not more than 89 millimetres and the storage of any net of this description by any British fishing boat.	The draft HND Implementation Plan should have regard for the objectives of the Act and should ensure that fisheries are suitably protected from loss or damage in its implementation. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna
The Sea Fishing (Licences and Notices) (EU Exit) (Scotland) (Amendment) Regulations 2019	These Regulations are made in consequence of the Sea Fish Licensing (Foreign Vessels) (EU Exit) (Scotland) Order 2019, which makes provision prohibiting fishing by foreign fishing boats in the Scottish zone unless authorised by a licence granted by the Scottish Ministers.	These Regulations extend the application of sea fishing licences granted by the Scottish Ministers to foreign fishing boats for fishing and receiving trans-shipped fish in the Scottish zone	The draft HND Implementation Plan should have regard for the objectives of the Act and should ensure that fisheries are suitably protected from loss or damage in its implementation. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna.
The Fisheries (Technical	These Regulations make miscellaneous amendments to	This Regulation makes amendments to the Sea Fish (Specified Sea Areas) (Regulation of Nets and Other	The draft HND Implementation Plan should have regard for the

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Conservation Measures) (EU Exit) (Scotland) (Amendment etc.) Regulations 2020	legislation concerning technical conservation measures for sea fisheries to reflect the coming into force of Regulation (EU) 2019/1241 of the European Parliament and of the Council (OJ No. L 198, 25.7.2019, p.105) ("the Technical Conservation Regulation") and the consequential repeal and amendment of other EU instruments.	Fishing Gear) (Scotland) Order 2000; the Sea Fish (Specified Sea Areas) (Regulation of Nets and Other Fishing Gear) (Scotland) Amendment Order 2001; the Shrimp Fishing Nets (Scotland) Order 2004; the Regulation of Scallop Fishing (Scotland) Order 2017; and the Prohibition of Fishing with Multiple Trawls (Scotland) Order 2017.	objectives of the Act and should ensure that fisheries are suitably protected from loss or damage in its implementation. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna.
The Prohibition of Fishing with Multiple Trawls (Scotland) Order 2017	This Order revokes and re-enacts with amendments the Prohibition of Fishing with Multiple Trawls (No. 2) (Scotland) Order 2000, by prohibiting fishing for sea fish with more than one trawl, except in two specified situations. The Order forms part of the law of Scotland only.	This Order prohibits the use of multiple trawl gear at a time in specified areas of the Scottish Zone. Applies to particularly sensitive inshore areas where multiple trawls pose a higher risk to marine biodiversity and seedbed integrity. The order is legally enforced and supports monitoring of fishing activity through vessel tracking and inspections.	The draft HND Implementation Plan should have regard for the objectives of the Act and should ensure that fisheries are suitably protected from loss or damage in its implementation. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna
The Inshore Fishing (Prohibition of Fishing and Fishing Methods) (Scotland) Order 2015	This Order prohibits, subject to certain exceptions where applicable, specified methods of fishing within specified areas which have been designated as	The order prohibits specific methods of fishing within specific areas of Scottish territorial waters, in particular near MPAs. The order aligns with conservation goals and is legally enforced.	The draft HND Implementation Plan should have regard for the objectives of the Act and should ensure that fisheries are suitably protected from loss or damage in its implementation.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	a Special Area of Conservation or as a Marine Protected Area.		Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna
The Marine Environment (EU Exit) (Scotland) (Amendment) Regulations 2019	The Regulations make amendments to legislation relating to the marine environment, marine licensing and environmental impact assessments for marine works.	Regulation 2 amends deficiencies arising from the withdrawal of the United Kingdom from the European Union which are contained within the Marine (Scotland) Act 2010 (asp 5). Regulation 3 makes amendments to remedy deficiencies in the Marine Licensing (Exempted Activities) (Scottish Offshore Region) Order 2011. Regulation 4 makes amendments to remedy deficiencies in the Marine Licensing (Exempted Activities) (Scottish Inshore Region) Order 2011. Regulation 5 makes amendments to remedy deficiencies in the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017.	The draft HND Implementation Plan should have regard for the objectives of the Act and should ensure that fisheries are suitably protected from loss or damage in its implementation. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna
The Inshore Fishing (Prohibited Methods of Fishing) (Luce Bay) Order 2015	This Order prohibits, subject to certain exceptions, specified methods of fishing within an area in Luce Bay which has been designated as a Special Area of Conservation.	The main prohibited fishing methods include a dredge, beam trawl, demersal seine net or demersal trawl – throughout the whole year in the protected area.	The draft HND Implementation Plan should have regard for the objectives of the Act and should ensure that fisheries are suitably protected from loss or damage in its implementation.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
			Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna
UK Blue Carbon Evidence Partnership Evidence Needs Statement 2023	The Evidence Needs Statement published by the UK Blue Carbon Evidence Partnership (UKBCEP) draws on the latest science, policy, and delivery expertise across the UK to identify several critical 'evidence gaps' to support policy for blue carbon habitats.	There are 5 key Blue Carbon objectives for which further evidence is needed: 1. Working towards the potential inclusion of saltmarsh and seagrass in the UK Greenhouse Gas Inventory (UK GHGI) 2. Encouraging and enabling investment in blue carbon habitats 3. Reducing the impacts of human and environmental pressures, including climate change risks, on blue carbon habitats 4. Managing coastal and marine habitats on a seascape scale, with consideration of land and marine connectivity 5. Achieving climate change mitigation, adaptation and biodiversity benefits from blue carbon habitats as nature-based solutions	The draft HND Implementation Plan should ensure that the natural environment and priority species and habitats are suitably protected from loss or damage in its implementation. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna
Marine Protected Area (MPA) Network Management: ACTION PLAN FOR WALES	The fifth Marine Protected Area (MPA) Network Management Action Plan for Wales (2022-2023),	The Plan sets out the priority network-level actions to improve MPA management of MPAs in Wales, through 5 MPA management principles: 1. Strategic Planning	The draft HND Implementation Plan should have regard for the objectives of the Plan and should ensure that MPAs are suitably protected from loss or damage in its implementation.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	produced by the Wales MPA Management Steering Group.	2. Regulation, development consenting and assessment processes 3. Management advice and guidance 4. Understanding the condition of, and pressures and threats on, sites and their features to inform management 5. Wider management	Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna
English Seabird Conservation and Recovery Pathway Technical Report 2024	Natural England commissioned this report to provide up to date, evidence-based, auditable, and transparent assessments of the sensitivity of a range of seabird and waterfowl species to a range of pressures (n=26).	The report outlines 74 actions grouped under 19 recommendations. These are organised into four themes: 1. Feeding 2. Breeding 3. Survival 4. Knowledge	The draft HND Implementation Plan should ensure that the natural environment and priority species and habitats are suitably protected from loss or damage in its implementation. Environmental protection objectives are reflected in the SEOs for Biodiversity, Flora and Fauna
Shark, Skate and Ray Conservation Plan 2011	This Plan explains the role of elasmobranchs in the ecosystem, their characteristics, and the pressures facing them. It summarises current management and conservation measures to protect sharks, skates and rays and sets out Defra's policy objectives.	The overall aim of Defra's work through this Plan is: To manage elasmobranch stocks sustainably so that depleted stocks recover and that those faring better are fished sustainably.	The draft HND Implementation Plan should have regard for the objectives of the Plan and should ensure that the natural environment and priority species and habitats are suitably protected from loss or damage in its implementation. Environmental protection objectives of the Regulations are reflected in

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			the SEOs for Biodiversity, Flora and Fauna
A Progress Review of the Defra Shark, Skate, and Ray Conservation Plan 2013	Outlines progress made on Key Actions listed in the Shark, Skate and Ray Conservation Plan 2011.	Progress and successes were measured against four main outcomes: 1. Catches (targeted and bycatch) of elasmobranchs are sustainable and that action is taken to protect and restore those species most at risk as a matter of priority. 2. Knowledge on elasmobranch fisheries and species is improved through better data collection and scientific research. Information is used to more effectively manage elasmobranchs. 3. International conservation bodies adopt and promote effective conservation measures for elasmobranchs. 4. Increased understanding, education and awareness of elasmobranch issues.	The draft HND Implementation Plan should have regard for the objectives of the Plan and should ensure that the natural environment and priority species and habitats are suitably protected from loss or damage in its implementation. Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna
(Scotland) Tackling the nature emergency. Consultation on Scotland's Strategic Framework for Biodiversity	The consultation proposes a series of changes to the National Parks (Scotland) Act 2000 to provide a legal framework and the necessary powers to tackle the interlinked crises of climate change and biodiversity loss.	This consultation sought views on a range of topics and proposals related to biodiversity and tackling the nature emergency in Scotland. It covers three parts of the Biodiversity Strategic Framework: 1. The Scottish Biodiversity Strategy which sets out our vision to halt and reverse biodiversity loss; 2. The first five-year Delivery Plan which contains the actions to deliver the vision; and	The draft HND Implementation Plan should have regard for the objectives of the Strategy and should ensure that the natural environment and priority species and habitats are suitably protected from loss or damage in its implementation.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		3. The proposed Natural Environment Bill which will provide a framework for establishing statutory nature targets to drive delivery and the transformational change we need.	Environmental protection objectives of the Regulations are reflected in the SEOs for Biodiversity, Flora and Fauna
Reducing Marine Noise Policy Paper 2025	This Policy Paper has been introduced due to the increasingly busy nature of the seas which can have impacts on marine mammals and other species.	This Policy Paper concerns the need to reduce noise generated in the marine environment from man-made activities, often associated with offshore renewable energy activities and cabling. The Policy Paper details the requirements placed on the UK government to address marine noise and also improve biodiversity.	The draft HND Implementation Plan should have consideration for the requirements placed to achieve reductions in marine noise.
Marine environment: unexploded ordnance clearance Joint Position Statement 2025	This Joint Position Statement relates to the impacts associated with the clearance of UXO.	The clearance of UXO requires a marine license, low order noise alternatives are available for the clearance of UXO with reduced environmentally impacts.	The draft HND Implementation Plan should have consideration for the requirements placed to achieve reductions in marine noise through low order detonation methods for UXO.
Supporting minimising environmental impacts from unexploded ordnance clearance 2025	These guidelines outline measures to minimise potential injury from the clearance through detonation of unexploded ordnance (UXO) in the marine environment.	The aim of these guidelines is to reduce the risk of deliberate or reckless injury to marine mammals to as low as reasonably possible by outlining relevant measures that can be implemented as part of consenting regimes for UXO clearance works within UK seas. It involves the use of minimum mitigation measures that must be considered.	The draft HND Implementation Plan should have consideration for the requirements for detonation methods for UXO.
JNCC guidelines for minimising the risk of injury to marine mammals from	These guidelines outline measures to minimise potential injury from the clearance through detonation of	The aim of these guidelines is to reduce the risk of deliberate or reckless injury to marine mammals to as low as reasonably possible by outlining relevant measures that can be implemented as part of	The draft HND Implementation Plan should have consideration for the requirements for detonation methods for UXO.

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unexploded ordnance (UXO) clearance in the marine environment 2025	unexploded ordnance (UXO) in the marine environment.	consenting regimes for UXO clearance works within UK seas. It involves the use of minimum mitigation measures that must be considered.	
JNCC, Natural England and Cefas position on the use of quieter piling methods and noise abatement systems when installing offshore wind turbine foundations 2025	This joint position statement reviewed the latest available scientific evidence in conjunction with industry engagement to consider new technologies for quieter piling methods.	The position statement highlights that given the expected levels of offshore development the use of quieter piling and noise abatement should be forefront in construction methods to reduce impacts.	The draft HND Implementation Plan should have consideration for the requirements for construction in the marine environment.
Evidence on the Efficacy of Underwater Noise Abatement	This review assesses the latest scientific evidence on the methods to reduce underwater noise.	The review outlines suitable noise abatement measures which should be considered during developments dependant on water depths during construction.	The draft HND Implementation Plan should have consideration for the requirements for construction in the marine environment.
		Climate Change / Air Quality	
England's Third National Adaptation Programme (NAP3) the Fourth Strategy for Climate Adaptation Reporting 2023 – 2028	This report sets out the actions that government and others will take to adapt to the impacts of climate change from 2023 to 2028.	This report forms part of the 5-yearly cycle of requirements laid down in the Climate Change Act 2008. The Strategy includes: • protecting the natural environment • supporting business in adapting to climate change	The draft HND Implementation Plan should aim to contribute towards climate change mitigation and infrastructure to be planned for and resilient to climatic change. Environmental Protection Objectives are reflected in SEOs for Climatic Factors and Water.

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		• adapting infrastructure (for example, our electricity networks and railways) • protecting buildings and their surroundings (for example, from hotter temperatures) • protecting public health and communities • mitigating international impacts on the UK (for example, on food supplies imported from abroad)	
Climate Adaptation Strategy for Wales 2024	The Strategy focuses on protecting the environment and adapting homes, communities, businesses, and infrastructure to deal with climate change.	The strategy includes actions such as building defences against flooding and coastal erosion and protecting water supplies from drought.	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of offshore renewable generators to the electricity system. Environmental Protection Objectives of the Act are reflected in the SEO for Climatic Factors.
Prosperity for All: A Climate Conscious Wales A climate change adaptation plan for Wales 2020 – 2025	A five-year plan which details what actions will be taken by Wales to adapt to climate change between 2020-2025	Actions already taken, short-term actions and medium-term actions are listed for the following priorities: 1. Protecting people, communities, buildings and infrastructure from flooding 2. Protecting public water supplies from drought and low flows	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of offshore renewable generators to the electricity system.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		3. Tackling land management practices that increase flood risk 4. Risks to ecosystems and agriculture businesses from changes in climatic conditions 5. Planning Policy for Wales & National Development Framework	Environmental Protection Objectives are reflected in SEOs for Climatic Factors.
Climate change: Scottish National Adaptation Plan 2024-2029	Sets out the actions that the Scottish Government and partners will take to respond to the impacts of climate change from 2024 to 2029.	The Plan includes over 200 policies and actions which are interconnected across five key outcomes: 1. Nature Connects 2. Communities 3. Public Services and Infrastructure 4. Economy, Business, and Industry 5. International Action	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of offshore renewable generators to the electricity system.
Climate Emergency Skills Action Plan 2020-2025 Key Issues And Priority Actions	Action Plan to promote key skills and green jobs to support Scotland's Net Zero targets and climate change regulations	Five areas of economic activity were identified where skills and green jobs will have a significant impact to Net Zero targets: • Energy transition (including oil and gas, on and offshore wind, hydrogen, electricity, carbon capture and storage) • Construction (including the retrofitting of housing and non-residential properties)	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of offshore renewable generators to the electricity system and the creation of jobs within this sector.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Transport (including road transport, railways, domestic aviation, shipping and aircraft support vehicles) • Manufacturing (with a focus on engineering) • Agriculture and land use management (including forestry).	
Securing a green recovery on a path to net zero: climate change plan 2018–2032 - update	This update to Scotland's 2018-2032 Climate Change Plan sets out the Scottish Government's pathway to our new and ambitious targets set by the Climate Change Act 2019.	This document updates the 2018 Climate Change Plan. New targets have been set to end Scotland's contribution to climate change by 2045. We have committed to reduce emissions by 75% by 2030 (compared with 1990) and to net zero by 2045.	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving carbon reduction targets through connection of offshore renewable generators to the electricity system.
UK Climate Change Act 2008	The Climate Change Act, the first of its kind in any country, set out a framework for moving the UK to a low-carbon economy.	The key component of the legislation requires a mandatory 60% cut in the UK's carbon emissions by 2050. Two key aims underpinning the Act: 1. Improve carbon management and help the transition towards a low carbon economy in the UK 2. Demonstrate strong UK leadership internationally, signalling that we are committed to taking our share of responsibility for reducing global emissions in the context of developing negotiations on a post-2012 global agreement at Copenhagen in 2009.	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of offshore renewable generators to the electricity system. Environmental Protection Objectives of the Act are reflected in the SEO for Climatic Factors.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
The Climate Change Act 2008 (2050 Target Amendment) Order 2019	Sets a legal requirement to reduce the UK's emissions of GHGs by 100% relative to 1990 levels by 2050.	Legislative basis for achieving the 'net zero' target by 2050, increasing the previous target committed to within UK legislation.	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of offshore renewable generators to the electricity system. Environmental Protection Objectives of the Act are reflected in the SEO for Climatic Factors.
Climate Change (Emissions Reduction Targets) (Scotland) Act 2019	The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 is a significant piece of legislation aimed at addressing climate change by setting ambitious emissions reduction targets for Scotland. Amended the Climate Change (Scotland) Act 2009, increasing the ambition of Scotland's emissions reduction targets to net zero by 2045.	• The Act sets a target for Scotland to achieve net-zero greenhouse gas emissions by 2045. It includes interim targets of a 75% reduction by 2030 and a 90% reduction by 2040, compared to 1990 levels. • The Act mandates annual targets to ensure consistent progress towards the long-term goals. • The Scottish Government is required to produce regular Climate Change Plans outlining how these targets will be met. • There are provisions for regular reporting and independent assessment to ensure transparency and accountability.	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of offshore renewable generators to the electricity system. Environmental Protection Objectives of the Act are reflected in the SEO for Climatic Factors.
Climate Change (Scotland) Act 2009	The Climate Change (Scotland) Act 2009 is a foundational piece of legislation aimed at reducing	• The Act sets a target to reduce greenhouse gas emissions by at least 80% by 2050, compared to	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	greenhouse gas emissions in Scotland.	1990 levels, as well as including an interim target of a 42% reduction by 2020. • The Act requires the setting of annual emissions reduction targets to ensure consistent progress. • The Scottish Ministers are required to seek advice from relevant advisory bodies, such as the UK Committee on Climate Change, when setting these targets. • The Act mandates regular reporting to the Scottish Parliament on progress towards these targets. • The Act places duties on public bodies in Scotland to contribute to the delivery of emissions reduction targets. • The Act also includes measures related to climate change adaptation, forestry, energy efficiency, and waste reduction.	renewable energy targets through connection of offshore renewable generators to the electricity system. Environmental Protection Objectives of the Act are reflected in the SEO for Climatic Factors.
The Climate Change (Wales) Regulations 2021	The Climate Change (Wales) Regulations 2021 are a set of regulations aimed at enhancing Wales's efforts to combat climate change. This set of regulations includes: • The Environment (Wales) Act 2016 (Amendment of 2050	• These Regulations amend the existing 2050 emissions reduction target, increasing the current 2050 target of 80% lower than the baseline to at least 100% ('net zero'). • The interim emissions targets for 2030 and 2040 are amended to 63% and 89%, respectively. • Carbon Budget 2 (2021-25) was tightened to a 37% reduction compared to the baseline (1990	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of offshore renewable generators to the electricity system.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	Emissions Target) Regulations 2021 • The Climate Change (Interim Emissions Targets) (Wales) (Amendment) Regulations 2021 • The Climate Change (Carbon Budgets) (Wales) (Amendment) Regulations 2021 • The Climate Change (Net Welsh Emissions Account Credit Limit) (Wales) Regulations 2021	levels). Whilst Carbon Budget 3 (2026-30) was set at a 58% reduction compared to 1990 levels. • The offset limit for Carbon Budget 2 was set as 0% of the carbon budget.	Environmental Protection Objectives of the Act are reflected in the SEO for Climatic Factors.
Historic Environment and Climate Change in Wales Sector Adaptation Plan	This Plan was introduced in response to the effects of climate change and its implications on the historic environment.	The plan was introduced to raise awareness on the implications of climate change on the historic environment. It has three key objectives of increasing knowledge, increase capacity and adapting to climate change through building resilience.	The draft HND Implementation Plan should have awareness of this Plan. The objectives of the plan are reflected in the SEO for Climatic Factors.
UK Climate Change Risk Assessment (CCRA) Programme 2022	The UK Government is required, under the Climate Change Act, to publish a CCRA every 5 years, setting out the risks and opportunities facing the UK from climate change.	The first CCRA was published by the Department for Environment, Food and Rural Affairs (Defra) in 2012, second in 2017 and third in 2022. These assessments identify the risk and opportunities posed by climate change over the next 5 years. Evidence Reports feed into the UK National Adaptation Programme, and national adaptation	The draft HND Implementation Plan should aim to contribute towards climate change mitigation. The Plan can contribute towards achieving renewable energy targets through connection of offshore renewable generators to the electricity system.

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		programmes of devolved administrations (i.e., the NICCAP2).	Environmental Protection Objectives are reflected in SEOs for Climatic Factors.
The National Emissions Ceiling Regulations 2018	Implement in the UK Directive 2016/2284/EU relating to national emission ceilings for certain atmospheric pollutants.	The Regulations require: • Preparation of an annual inventory of emissions of certain pollutants occurring in the UK, and projections of such emissions. • Ensure from 2010-2019 that anthropogenic emissions of sulphur dioxide, nitrogen oxides, VOCs and ammonia occurring within the UK do not exceed specified amounts. • Ensure from 2020-2029 that anthropogenic emissions of sulphur dioxide, nitrogen oxides, VOCs, ammonia and fine particulate matter occurring within the UK do not exceed specified amounts, and from 2030 that they do not exceed additional specified amounts. • Ensure emissions in 2025 are following a linear reduction trajectory between 2020 and 2030 targets. • Preparation of a national air pollution control programme, to which public authorities must have regard. • Locate sites representative of specified ecosystems and habitats in order to monitor the negative impacts of air pollution.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Regulations. The plan should aim to not cause any negative impacts on air quality that could breach standards and objectives and may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality and Climatic Factors.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
UK National Air Pollution Control Programme (NAPCP) 2023	Programme required under The National Emission Ceilings Regulations 2018. The NAPCP sets out how the UK can meet the legally binding 2020 and 2030 emission reduction commitments.	Emission reduction commitments apply for 5 pollutants: nitrogen oxides, ammonia, non-methane VOCs, particulate matter and sulphur dioxide.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Programme. The plan should aim to not cause any negative impacts on air quality and may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system. Environmental Protection Objectives are reflected in the SEOs for Air Quality and Climatic factors.
Environment (Air Quality and Soundscapes) (Wales) Act 2024	The 2024 Act seeks to improve the quality of our air environment and reduce the impacts of airborne pollution on human health, nature, the environment and our economy.	• The 2024 Act creates a framework for the Welsh Ministers to set targets in relation to air quality and amends existing air quality legislation in relation to local air quality management, road user charging, anti-idling and smoke control such as the Environment Act 1995. • The Act also creates new duties for the Welsh Ministers to take steps to promote awareness of the risks to human health and the natural environment caused by air pollution, and ways of reducing or limiting air pollution. • The 2024 Act also places the Welsh Ministers and local authorities under a duty to promote active travel as a way of reducing or limiting air pollution	The draft HND Implementation Plan should have regard for the environmental protection in terms of local management which arise as a result of this legislation. The plan should aim to not cause any negative impacts on air quality and soundscapes. The Plan may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		and makes provision for this duty to be imposed by regulations, on other public authorities. • The Act also requires the Welsh Ministers to produce a national strategy on soundscapes.	
The Environment Act 2021	This legislation acts as the UK's new framework of environmental protection. It provides the Government with powers to set new binding targets, including for air quality, water, biodiversity, and waste reduction.	• Establishes the Office for Environmental Protection as a new environmental watchdog. • Sets the priority areas as air quality, water, biodiversity, and resource efficiency and waste reduction. • Established a legally binding duty on Government to bring forward at least two new air quality targets in secondary legislation.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this legislation. The plan should aim to not cause any negative impacts on air quality, water, biodiversity and waste, and may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system.
Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 (due to be amended / updated in May 2023)	The Air Quality Strategy sets out air quality objectives and policy options to improve air quality in the UK from current to long-term. As well as direct benefits to human health, these options are intended to provide important benefits to quality of life and to help protect the environment.	The Strategy sets out the UK Government and devolved administrations' air quality objective and the measures selected to achieve desired improvements in air quality. The overall aim is a steady decrease in ambient levels of pollutants towards the objectives over the period of implementation. These objectives are a statement of policy intentions or targets and are not legally binding in themselves. • The main sources, hazards and strategy's objectives are provided for the following pollutants: particulate matter, oxides of nitrogen,	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Strategy. The plan should aim to not cause any negative impacts on air quality and may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system. These environmental protection objectives are reflected in the SEOs for Air Quality and Climatic Factors.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		ozone, sulphur dioxide, polycyclic aromatic hydrocarbons, benzene, 1,3-butadiene, carbon monoxide, lead and ammonia.	
Air Quality Strategy for England 2023: framework for local authority delivery	A strategic framework for local authorities and other partners. It sets out their powers, responsibilities, and further actions the government expects them to take.	Outlines several key objectives and actions for local authorities to improve air quality such as implementing planning reforms to support air quality improvements, reducing emissions from industrial sources by improving enforcements of environmental permits, raising awareness within local communities about air quality impacts and ways to reduce them.	The draft HND Implementation Plan should have regard for any environmental protections which may arise as a result of this strategy. The plan should aim to not cause any negative impacts on air quality and may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system. Environmental Protection Objectives are reflected in the SEOs for Air Quality and Climatic factors.
Clean Air Strategy 2019	A key document in tackling air pollution, making air healthier to breathe, protecting nature and boosting the economy. The strategy looks at a range of actions to reduce emissions/pollution, including Transport, The home, Farming, Industry and Clean growth and innovation.	The strategy outlines a number of actions which aim to: • Understand the current sources and of air pollution and a more precise picture of the current air quality • Protect the nation's health • Protect the environment • Secure clean growth and innovation • Reduce emissions from transport, home, farming and industry	The draft HND Implementation Plan should have regard for the environmental and health protection objectives of this legislation. The plan should aim to not cause any negative impacts on air quality, health or environment. The Plan may be able to contribute to clean growth and innovation and reducing air emissions by connecting offshore renewable energy generators to the system.

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Cleaner Air for Scotland - The Road to a Healthier Future (CAFS)	This is a national cross-government strategy that sets out how the Scottish Government and its partner organisations propose to further reduce air pollution to protect human health and fulfil Scotland's legal responsibilities as soon as possible. The strategy aims to achieve the ambitious vision for Scotland "to have the best air quality in Europe".	Sets out a series of 40 actions across six main objectives in relation to legislation and policy, health, transport, placemaking, climate change and communication, with a common thread of sustainability running through these. The actions were designed to further improve air quality, 36 of which were fully completed within the lifetime of the strategy.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this legislation. The plan should aim to not cause any negative impacts on air quality. The Plan may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system.
Cleaner Air for Scotland 2 - Towards a Better Place for Everyone	A new air quality strategy to replace Cleaner Air for Scotland - The Road to a Healthier Future, setting out the Scottish Government's air quality policy framework for the next five years and a series of actions to deliver further air quality improvements.	Sets out a series of actions grouped across ten policy areas (and the four uncompleted actions form Cleaner Air for Scotland). The policy areas are Health, Integrated Policy, Placemaking, Data, Public Engagement and Behaviour Change, Industrial Emissions Regulation, Tackling Non-Transport Emissions Sources, Transport, Governance, Accountability and Delivery. And Further Progress Review.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this strategy. The plan should aim to not cause any negative impacts on air quality. The plan may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system.
Air Quality Standards Regulations 2010 (as amended)	These regulations provide a legal framework to ensure air quality is maintained and improved across the UK. They set out the standards for ambient air quality, ensuring	• The regulation established legal limits and target values for pollutants in the air for key pollutants such as particulate matter, lead, carbon monoxide, benzene, sulphur dioxide, nitrogen dioxide, ozone and arsenic.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this legislation. The plan should aim to not cause any negative impacts on air quality. The Plan may

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	the protection of human health and the environment from harmful pollutants.	• The UK government is responsible for regular monitoring and assessment of air quality levels to ensure compliance with set limits. • Ensures the public is informed about air quality levels and any exceedances of the stablished limits. • Mandates the creation of air quality action plans and short-term action plans to address and mitigate any exceedances, to improve overall air quality.	be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system.
Air Quality Standards (Scotland) Regulations 2010 (as amended)	These regulations establish the legal framework for maintaining and improving air quality in Scotland. They set out the standards for ambient air quality, ensuring the protection of human health and the environment from harmful pollutants.	• The regulation established legal limits and target values for pollutants in the air for key pollutants such as particulate matter, lead, carbon monoxide, benzene, sulphur dioxide, nitrogen dioxide, ozone and arsenic. • The UK government is responsible for regular monitoring and assessment of air quality levels to ensure compliance with set limits. • Ensures the public is informed about air quality levels and any exceedances of the stablished limits. • Mandates the creation of air quality action plans and short-term action plans to address and mitigate any exceedances, to improve overall air quality.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this legislation. The plan should aim to not cause any negative impacts on air quality. The Plan may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system.

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Air Quality Standards (Wales) Regulations 2010 (as amended)	These regulations establish the legal framework for maintaining and improving air quality in Wales. They set out the standards for ambient air quality, ensuring the protection of human health and the environment from harmful pollutants.	• The regulation established legal limits and target values for pollutants in the air for key pollutants such as particulate matter, lead, carbon monoxide, benzene, sulphur dioxide, nitrogen dioxide, ozone and arsenic. • The UK government is responsible for regular monitoring and assessment of air quality levels to ensure compliance with set limits. • Ensures the public is informed about air quality levels and any exceedances of the stablished limits. • Mandates the creation of air quality action plans and short-term action plans to address and mitigate any exceedances, to improve overall air quality.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this legislation. The plan should aim to not cause any negative impacts on air quality. The Plan may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system.
Environmental Targets (Fine Particulate Matter) (England) Regulations 2023	These regulations set specific targets for reducing fine particulate matter (PM2.5) in ambient air in England. These targets are part of the UK government's efforts to improve air quality and protect public health from the harmful effects of air pollution.	• The primary goal is to establish a legally binding target for the concentration of OM2.5 in ambient air. They set a target for the annual average concentration of PM2.5 to not exceed 10µg/m^3 by 2030. • Aims to reduce the overall exposure of the population to PM2.5 and improve public health outcomes, as well as minimising the environmental damage caused by fine particulate matter.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this legislation. The plan should aim to not cause any negative impacts on air quality. The Plan may be able to contribute to reducing PM2.5 emissions by connecting offshore renewable energy generators to the system.

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		• In addition to the long-term target for 2023, intermediate steps for the reduction of PM2.5 are outlined.	
The Clean Air Plan for Wales 2020: Healthy Air, Healthy Wales	This is a comprehensive strategy aimed at improving air quality and reducing the impacts of air pollution on human health, biodiversity, the natural environment, and the economy. This Plan sets out a 10-year pathway to achieving cleaner air.	The Plan is based around four core themes, with actions to enable collaborative approaches to reducing air pollution. • People: Protecting the health and well-being of current and future generations • Environment: Taking action to support our natural environment, ecosystems and biodiversity • Prosperity: Working with industry to reduce emissions, supporting a cleaner and more prosperous Wales • Place: Creating sustainable places through better planning, infrastructure and transport.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the plan. The plan should aim to not cause any negative impacts on air quality and may be able to contribute to reducing air emissions by connecting offshore renewable energy generators to the system.
Sustainable Development and Energy			
The Crown Estate Act 2025	This bill has granted new powers to The Crown Estate in terms of granted borrowing and investments to increase its financial, social and environmental value.	This bill aims to allow for greater flexibility for aiding in the decarbonisation of the UK and improve energy security and nature recovery, whilst boosting profits for public spending.	The draft HND Implementation Plan should have consideration for the opportunities emerging from this bill, whilst this bill may also benefit the draft HND Implementation.
Energy Act 2023	The Energy Act 2023 is a comprehensive piece of legislation in the UK that addresses energy production,	The Act has many policy objectives, including:	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Act by facilitating the connection of

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	security, and regulation with an emphasis on a net-zero economy. It aims to support the deployment of low-carbon technologies, including carbon capture, utilization, and storage (CCUS) and hydrogen. The Act covers various aspects related to the energy market, licensing, financial support, heat networks and energy performance. The Act will help the government deliver net zero by 2050 in a pragmatic, proportionate and realistic way.	• leveraging private investment in clean and low carbon technologies, such as carbon capture and storage and low carbon hydrogen; • establishing an independent system operator and planner (better known as the Future System Operator), to be tasked with taking a whole-system approach to coordinating and planning the development of Great Britain's energy systems, and operating the electricity system; • creating a new governance framework for the energy industry codes; • increasing competition in Great Britain's onshore electricity networks through competitive tendering; and • making changes to the legal processes which govern the development of offshore wind projects in the UK with the intention of speeding up the consenting process.	offshore renewable energy generators to the electricity system.
Great British Energy Act 2025	This Act introduces a publicly owned energy company to accelerate clean power in the UK under the Plan for Change	This Act aims to introduce investment in clean power projects across the UK to bring energy security and jobs to the UK. It also aims to increase development of new offshore renewable technologies such as floating offshore wind.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Act by facilitating the connection of offshore renewable energy generators to the electricity system.
Powering Up Britain: Energy Security Plan	This is a comprehensive plan which sets out the steps the government is taking to ensure	The key objectives of the Plan include:	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan by

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	the UK is more energy independent, secure and resilient.	• Reducing the UK's reliance on volatile international energy markets and increase the domestic generation of energy. This includes diversifying the energy sources and improving energy infrastructure. • Decarbonise the UK energy system, aligning with the country's climate commitments, including reaching net-zero emissions by 2050. This includes boosting renewable energy sources. • Seeks to stabilise energy prices for consumers by increasing domestic energy supply. • The energy transition may create jobs, particularly in the renewable energy sectors. This is expected to support economic growth,	facilitating the connection of offshore renewable energy generators to the electricity system.
Powering up Britain: The Net Zero Growth Plan	This plan is the UK government's comprehensive strategy aimed at achieving net-zero greenhouse gas emissions by 2050. The plan outlines how the UK will leverage green technologies and sectors to drive the economy towards a low-carbon future.	• The primary goal is to reduce greenhouse gas emissions across all sectors of the economy to net-zero by 2050, in line with the UK's legally binding climate commitments under the Climate change Act. • This plan emphasises the expansion of renewable energy sources such as offshore wind, solar, onshore wind, to meet sustainable energy demands, as well as identifying green hydrogen as a critical component of the future energy mix to support decarbonisation. Utilisation of Carbon Capture and Storage and Nuclear energy are	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		also noted as being important for the reduction of emissions. • The plan stresses the need for energy security and reducing reliance on fossil fuel imports by developing domestic sustainable energy sources. • The plan recognises the need to modernise the UK's infrastructure including energy grids, transport systems and industrial facilities to accommodate and support green technologies. • The transition to a green economy can be used to drive economic growth by creating high-quality jobs in emerging sectors such as renewable energy, hydrogen, electric vehicles and energy efficiency.	
Net Zero Strategy: Build Back Greener	This sets out policies and proposals for decarbonising all sectors of the UK economy to meet the Government's net zero target by 2050. This strategy is a long-term plan for a transition that will take place over the next three decades. Many of the policies in the strategy will be phased in over the next decade or longer.	• Achieving net-zero emissions by 2050 through clean energy solutions, energy efficiency and carbon capture including decarbonising the power sector by 2035. • Creating green jobs and investing in innovation, particularly in industries such as clean transport and renewable energy. • Promoting energy efficiency in buildings and homes to cut emissions. • Accelerating clean growth through sustainable industries and boosting low-carbon technologies such as hydrogen production.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.

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Clean Power 2030	This Action Plan establishes the route needs to be taken to deliver a clean power system to the UK.	This Plan includes actions to address three of the main issues in power supply in the UK which includes maintained a secure and affordable energy supply, develop new industries and investments and to protect the environment.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Action Plan.
Energy white paper: Powering our net zero future	This sets out how the UK will clean up its energy system and reach net zero emissions by 2050. The energy white paper builds on the Prime Minister's Ten-point plan for a green industrial revolution.	Building a cleaner, greener future for the country, the people and the planet by measures including: • targeting 40GW of offshore wind by 2030, including 1GW floating wind, alongside the expansion of other low-cost renewables technologies • supporting the deployment of Carbon Capture Usage and Storage (CCUS) and putting in place the commercial frameworks required to help stimulate the market to deliver a future pipeline of CCUS projects • establishing a new UK Emissions Trading System, aligned to the net zero target, giving industry the certainty they need to invest in low-carbon technologies • aiming to bring at least one large-scale nuclear project to the point of Final Investment Decision by the end of this Parliament, subject to clear value for money and all relevant approvals	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.

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		• consulting on whether it is appropriate to end gas grid connections to new homes being built from 2025, in favour of clean energy alternatives • growing the installation of electric heat pumps, from 30,000 per year to 600,000 per year by 2028 • building world-leading digital infrastructure for our energy system based on the vision set out by the independent Energy Data Taskforce, publishing the UK's first Energy Data Strategy in spring 2021, in partnership with Ofgem, as well as supporting a green recovery from COVID-19 and creating a fair deal for customers.	
British energy security strategy	This strategy outlines the GB plans to enhance GB's energy security, reduce reliance on imported fossil fuels, and accelerate the transition to cleaner, more sustainable energy sources.	• Diversifying GB's energy supply through increasing the domestic production of energy through renewables, nuclear power and offshore wind. • Expanding the offshore wind capacity, solar power and hydrogen production. • Improving energy resilience through ensuring a reliable energy supply is in place by strengthening infrastructure and storage. • Reducing dependence on fossil fuels by transitioning to cleaner alternatives. • Promoting advancements in low-carbon technologies and energy efficiency.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.

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The Ten Point Plan for a Green Industrial Revolution	The ten-point plan sets out the approach government will take to build back better, support green jobs, and accelerate our path to net zero.	The plan focuses on increasing ambition in the following areas: • advancing offshore wind • driving the growth of low carbon hydrogen • delivering new and advanced nuclear power • accelerating the shift to zero emission vehicles • green public transport, cycling and walking • 'jet zero' and green ships • greener buildings • investing in carbon capture, usage and storage • protecting our natural environment • green finance and innovation The ten-point plan will mobilise £12 billion of government investment, and potentially 3 times as much from the private sector, to create and support up to 250,000 green jobs.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.
Draft Energy Strategy and Just Transition Plan –delivering a fair and secure zero carbon energy system for Scotland	The draft Strategy maps out the future of our energy sector and sets out an ambitious suite of actions for the Scottish Government, along with actions for industry, the regulator and the UK Government, to realise	Actions are set out in this plan to ensure that: • People have access to affordable clean energy. • Communities and places can participate and benefit in the net zero energy transition.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Strategy.

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	that bright future over the next decade.	• Scotland has a supportive policy environment, maximising the impact of government expenditure and attracting private investment. • Scotland is home to a multi-skilled energy workforce, boosting our domestic supply chain and manufacturing capabilities. • Scotland's net zero energy system is continuously innovative and competitive in domestic and international markets.	
The Scottish Energy Strategy: The Future of Energy in Scotland	This strategy sets out long-term goals for the country's energy system up to 2050. It highlights the need for a secure, affordable, and reliable energy supply, while also promoting economic opportunities through low carbon and renewable energy. The strategy aims to decarbonize Scotland's energy requirements, including electricity, heat, and transport.	This Strategy sets two new targets for the Scottish energy system by 2030: • The equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied from renewable sources. • An increase by 30% in the productivity of energy use across the Scottish economy. The 2050 vision is built around six priorities: • Energy efficiency: direct and supportive action will be taken to improve the use and management of energy in Scotland's homes, buildings, industrial processes and manufacturing • Renewable and low carbon solutions: champion and explore the potential of Scotland's potential renewable energy resource, and its ability to meet the local and nation needs	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.

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		• Innovative local energy systems: empower communities by supporting development of innovative and integrated local energy systems and networks. • Oil and gas industry strengths: support innovation, investment and diversification across the oil and gas sector • System security and flexibility: Scotland should have the capacity, connections, flexibility and resilience necessary to maintain secure and reliable supplies of energy to all home and business as the energy transition takes place • Consumer engagement and protection: protect consumers from excessive or avoidable costs and promote the benefits of smarter domestic energy applications and systems.	
A Blue Economy Vision for Scotland	This vision aims to set out the Scottish Government's long-term ambition for Scotland's blue economy to 2045 with an approach consistent with Scotland's National Performance Framework.	The vision includes six key outcomes which have been designed in relation to the climate and biodiversity crises, the net zero transition and promoting a blue recovery. It aims to place the environment and stewardship at the centre of the focus with increased resilience to the effects of climate change with a focus on ecosystem-centred approaches.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this vision by promoting the transition to net zero.
Energy Efficiency Strategy for Wales (2016–2026)	The strategy aims to make Wales a leader in energy efficiency, reducing energy consumption and carbon	• People, communities, businesses and other organisations, recognise the benefits of energy efficiency and take action.	The draft HND Implementation Plan has a key role to play in furthering

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	emissions while boosting economic growth and addressing fuel poverty.	• Have the supply chain throughout Wales to deliver energy efficiency improvements: to buildings, products and processes, and those businesses go on to grow and export their expertise and know how. • Have a well-educated and skilled workforce capable of responding to the energy efficiency challenge and this is supported by the engagement and investment from employers. • Support innovation in new energy efficiency products to deliver solutions in Wales; and our businesses benefit from the opportunities presented by this global challenge. • Have clear funding mechanisms, a clear pathway to reduced carbon emissions and a stable framework that is attractive to investors and consumers.	the ambitions set out in this Strategy.
Preparing Wales for a Renewable Energy 2050: A report from the National Infrastructure Commission for Wales (NICW)	This Report outlines recommendations that are designed to accelerate the deployment of renewable electricity across Wales.	• By 2025, the Welsh Government should present a vision for energy in Wales to 2050, with an accompanying Strategy and Action Plan to set out its long-term ambition. This should include detail on renewable energy production and grid development. • By 2025, planning for the electricity grid in Wales should be based on policy considerations as well as functionality.	The draft HND Implementation Plan has the potential to contribute to the fulfilment of the recommendation set out in this report.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• By 2025, Ofgem should reform the system that plans for and delivers grid access for renewable energy to enable rapid deployment. • An immediate review of Part L of the Building Regulations is needed to mandate the use of renewable technologies (especially solar thermal and solar photovoltaics) and battery storage in all new developments, and in significant renovations or extensions. • Permitted development rights should be immediately reviewed with a specific focus on eliminating impediments to measures that increase renewable energy generation, with a shifted focus on the climate crisis. • By 2025, where renewable energy planning applications (and associated regulatory regimes) have a mandated, statutory time allocation, decisions should default to a positive if the time allocation elapses with no response ('positive silence' approach) • By 2025, a pooled planning resource for energy should be created to share expertise and technical skills for articulating planning policies, engaging with the public and considering planning applications. • A Renewable Energy (Wales) Bill should be brought forward in the next Senedd to legislate to	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		enable greater community ownership from renewable energy. • Policy should require renewable energy developments to offer up elements of community ownership and repowering of sites should be greatly simplified but include community ownership requirements. • The forthcoming Freeports initiative should be seen as an opportunity to allow more community renewable energy in a deregulated environment. • By 2030, The Crown Estate's functions in Wales should be completely devolved to a new body that has as its principal aim the reinvestment of all funds in Wales for the long-term benefits of the people of Wales in the form of a Sovereign Wealth Fund.	
Welsh Government Net Zero strategic plan	This Strategic Plan outlines a series of key actions and objectives to reach the target of net zero emissions by 2030.	• The plan sets a target for the Welsh Government to be net zero by 2030, aligning with the broader goal for the public sector. • The plan includes 54 initiatives aimed at reducing greenhouse gas emissions across various sectors, such as buildings, recycling, travel, and energy use. • Involve extensive input from stakeholders across the Welsh Government, ensuring a comprehensive approach to decarbonization.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• The initiatives will be assessed and reviewed in 2025 and 2030 to ensure progress and make necessary adjustments. • The plan supports the Wellbeing of Future Generations (Wales) Act 2015, which addresses long-term issues like climate change, poverty, and health inequalities.	
Working together to reach net zero: all Wales plan	This plan outlines the collaborative efforts required to achieve net-zero greenhouse gas emissions across Wales by 2050, with an interim focus on the second carbon budget period from 2021 to 2025.	This document themes the Pledges by areas where the intent for action was made. These are: • Commitment to Net Zero or Action on Climate Emergency • Understanding and Reducing Carbon Footprint • Education, Engagement and Capacity Building • Energy and Reducing Energy Demand › Homes and Housing • Circular Economy and Waste • Enriching our Natural Resources	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.
Net Zero Wales Carbon Budget 2 (2021 to 2025)	This outlines the emissions reduction targets and the measures that the government plans to implement to meet its goals.	• The carbon budget sets a target for reducing emissions by 37% from the levels in 1990 by the end of 2025. • Expected contributions from different sectors towards this goal are outlined. • Electricity and heat generation: By 2025, 1GW additional energy capacity will be installed; there	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		will be no new build fossil fuel generation in Wales by 2021 whilst all current unabated gas generation will be removed from the system by 2035; any additional supply will be met from decarbonised power plant from 2035. • Transport: Aim to reduce emissions from passenger transport through demand reduction, modal shift and uptake of low carbon technologies; reduce number of car miles travelled per person and increase proportion of trips by sustainable travel mode. • Land use, land change and forestry: increase woodland creation rates committing to 43,000 hectares of new woodland by 2030 and 180,000ha by 2050. Over 3,000 hectares of Peatland will be on a recovery pathway by 2025. • Residential Buildings: Improve energy efficiency, phase out fossil fuels for low carbon heat and examine how behavioural and societal shifts could lead to reduced demand and energy efficiency of appliances. • Industry and Business: improve resource and energy efficiency, switching to low carbon fuels including hydrogen, utilise carbon capture and storage, bioenergy with carbon capture and storage (BECCS0 and hydrogen plants, increase efficiency of our commercial buildings stock.	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Agriculture: Increasing the use of low carbon farming practices which reduce emissions from soils, livestock and waste and manure management. Measures should also be implemented to release land from agriculture while maintaining a strong food production sector • Waste Management: Reducing greenhouse gas emissions form landfill sites, achieve 70% recycling across all waste streams, promote recycling and further reduce waste. • Public Sector to be collectively net zero by 2030.	
Climate Adaptation Strategy for Wales 2024	The plan sets out how Wales will approach mitigating and adapting to climate change, emphasising the protection of natural resources, enhancement of resilience and promotion of sustainable energy.	The strategy highlights the importance of adapting to climate-related risks such as flooding, coastal erosion, heatwaves, drought s and wildfires. It emphasises a collaborative approach involving public and community engagement, governance and monitoring progress. The strategy introduces 15 adaption action plans which aim to strengthen the resilience to climate change in key sectors such as: • Agriculture • Forestry and Woodland • Fisheries and Aquaculture • Food Security	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Water Quality and Supply • Health and Wellbeing • Business • Transport • Buildings • Towns, Cities and Rural Communities • Culture and the Historic Environment • Energy Supply • Telecoms and ICT • Finance • Nature.	
Regional energy strategy: North Wales	Outlines the approach of the North Wales region to achieve a sustainable, low-carbon future.	Priorities of the strategy include: • To harness the abundance of local low carbon resources to become a green powerhouse and diversify the energy mix. • To become a world-leader in offshore wind and marine technologies. • To improve the energy efficiency of the region's housing and accelerate the decarbonisation of North Wales' building stock. • To achieve a shift to lower carbon transport.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Regional Energy Strategy: Mid Wales	Outlines the approach of the Mid Wales region to achieve a sustainable, low-carbon future.	Priorities of the strategy include: • Drive forward the decarbonisation of the region's housing and building stock. • Ensure that electricity and gas grids in the region are suitable for a 100% decarbonised future. • Boost the use of renewable energy through new generation and storage. • Accelerate the shift to zero carbon transport whilst also improving the region's connectivity. • Develop and harness the potential of agriculture to contribute to zero carbon energy. • Harness innovation to support decarbonisation and clean growth.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.
Regional Energy Strategy: South West Wales	Outlines the approach of the South West Wales region to achieve a sustainable, low-carbon future.	Priorities of the strategy include: • Energy efficiency • Electricity generation • Smart and flexible systems • Decarbonise heat • Decarbonise transport • Regional coordination	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Regional energy strategy: Cardiff Capital Region	Outlines the approach of the Cardiff Capital Wales region to achieve a sustainable, low-carbon future.	Priorities of the strategy include: • Energy efficiency and heat • Electricity and flexibility • Decarbonise transport • Coordination, planning regional support and ownership of the plan	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this Plan.
Electricity Act 1989 (as amended)	This legislation governs the generation, transmission, distribution and supply of electricity in the UK.	• The Act sets out the framework for licencing electricity transmission for both onshore and offshore cable projects, developers must obtain licences to construct and operate transmission systems. • The Act sets the principles of network connection and ensures that any cable infrastructure development complies with regulations regarding safety, efficiency and security. • The Act established Ofgem as the regulator for the electricity sector which oversees the licensing, regulation and operation of grid networks, ensuring transmission system are secure, efficient and meet the needs of consumers. • The Act underpins many of the government's energy policies, including the need for a national grid that electricity is provided to all areas, and can accommodate increased renewable energy generation.	The draft HND Implementation Plan should have regard for the consent requirements of the Act, during the planning and development of both onshore and offshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• The Act has provisions surrounding Transmission System Operators (TSOs) who oversee new or upgraded transmission networks. • The Act provides the structure for licencing and regulating Offshore Transmission Owners. • The Act has been adapted to support the transition to low-carbon and renewable energy.	
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017	These regulations set out the requirements for conducting environmental impact assessments (EIAs) for electricity-related projects in Scotland.	Projects under Schedule 1 require and EIA under any circumstances, whilst those under Schedule 2 require an EIA Screening based on their scale and location. • See EIA Directive.	The draft HND Implementation Plan will have regard to the EIA Directive in the development of any onshore or offshore infrastructure. Development and operation of projects may be subject to EIA.
The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017	These regulations set out the requirements for conducting environmental impact assessments (EIAs) for electricity-related projects in England and Wales.	Projects under Schedule 1 require and EIA under any circumstances, whilst those under Schedule 2 require an EIA Screening based on their scale and location. See EIA Directive.	The draft HND Implementation Plan will have regard to the EIA Directive in the development of any onshore or offshore infrastructure. Development and operation of projects may be subject to EIA.
The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017	These regulations set out the framework for conducting environmental impact assessments (EIA) for certain infrastructure projects in the UK. These regulations ensure that the potential environmental effects of proposed	Offshore transmission infrastructure, such as subsea cables for offshore wind farms, falls under Schedule 2 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. These projects may require an Environmental Impact Assessment (EIA) if they are likely to have significant environmental effects, as determined through a screening process.	The draft HND Implementation Plan will have regard to the EIA Directive in the development of any onshore or offshore infrastructure. Development and operation of projects may be subject to EIA.

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	developments are considered before decisions are made.	See EIA Directive.	
Civil Nuclear: Roadmap to 2050	This Roadmap sets out the pathway for UK nuclear energy in both the short-term and long-term to help achieve net-zero.	This Roadmap includes a series of actions and steps required to achieve improvements in the UK nuclear sector and promotes investments in nuclear power options.	
Food and Environment Protection Act 1985	This Act is UK legislation which was enacted to protect public health from the consumption of unsuitable food, the environment from pollution and waste disposal, and to regulate pesticide use. The Act allows for the authorisation of otherwise prohibited activities.	The objective of the seeking authorisation of otherwise prohibited activities is to; • Protect against the human consumption of food rendered unsuitable due to pollution; • Provide fresh provision of the deposit of substances or articles in the sea or under the seabed, replacing the Dumping at Sea Act 1974; • Regulate pesticides and substances, preparations and organisms prepared or used for pest control; • And for connected purposes. A FEPA license is required for or the deposit of any substances or articles in the sea or under the sea-bed in UK waters, UK controlled waters, or from British vessels.	The draft HND Implementation Plan should comply with the objectives of the Act, in the planning and development of offshore and onshore transmission infrastructure.
Environmental Assessment (Scotland) Act 2005	This Act mandates the assessment of the environmental effects of certain	The main aim of this assessment is to ensure that public and private bodies undertake assessment of the likely impacts of their actions environmentally, it extends the requirements of the European Direction	The draft HND Implementation Plan should comply with the objectives of the Act, in the planning and

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	plans and programmes within Scotland.	(2001/42/EC). It aims to promote sustainable development and considerations on the environment in the planning and decision-making process.	development of offshore and onshore transmission infrastructure.
Environmental Assessment of Plans and Programmes (Scotland) Regulations 2004	Implements the SEA Directive (2001/42/EC) in Scotland. To provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.	See SEA Directive.	The draft HND Implementation Plan will be subject to the SEA process. This is being undertaken through this Scoping Report and subsequent Environmental Report.
(England) Environmental Assessment of Plans and Programmes Regulations 2004	Implements the SEA Directive (2001/42/EC) in England. To provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.	See SEA Directive.	The draft HND Implementation Plan will be subject to the SEA process. This is being undertaken through this Scoping Report and subsequent Environmental Report.
Environmental Assessment of Plans and Programmes	Implements the SEA Directive (2001/42/EC) in Wales. To provide for a high level of	See SEA Directive.	The draft HND Implementation Plan will be subject to the SEA process. This is being undertaken through

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
(Wales) Regulations 2004	protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.		this Scoping Report and subsequent Environmental Report.
Offshore Transmission Network Review (OTNR)	A review into the way that the offshore transmission network is designed and delivered, consistent with the ambition to deliver net zero emissions by 2050. The scope of this review into the existing offshore transmission regime was to address the barriers it presents to further significant deployment of offshore wind, with a view to achieving net zero ambitions.	Key outputs of the OTNR include: • Delivering a holistic approach to network planning: The Holistic Network Design (HND) was published, recommending onshore and offshore design for a network to enable the connection of 18 new offshore wind farms with a combined capacity of 23GW. The HND follow up exercise recommended connections for an additional 24GW of offshore wind. • Setting the direction through policy change and action: Considered Interconnection and Multi-Purpose Interconnectors, developing recommendations for a Future Framework, grant funding to support voluntary coordination, accelerated Strategic Transmission Investment, delivering retrospective coordination among well advanced projects, working with communities hosting infrastructure. • Regulatory change to enable coordination: Anticipatory investment, Codes and standards	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this document by facilitating the connection of offshore renewable energy generators to the electricity system.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		and Generator Commissioning Clause (GCC) and inter array systems. • Enabling a consenting process focussed on coordination and scale through amending National Policy Statements, consenting and Nationally Significant Infrastructure Projects (NSIP) reform, and leasing rounds designed with grid and coordination in mind (Celtic Sea).	
The NOA 2021/22	The Network Options Assessment (NOA) provides NESO's recommendation for which network reinforcement projects should receive investment, and when.	• Fully integrates the HND's offshore network and confirms the wider onshore network requirements beyond those fundamentally required to facilitate the connection of each in-scope offshore wind farm. • The NOA 2021/22 Refresh also indicates when these reinforcements will be required to deliver the most value to consumers. • Together, the HND and the NOA 2021/22 Refresh have identified 94 schemes that are required to meet the Government's ambition for 50 GW of offshore wind by 2030. This comprises of 56 schemes that have been identified as HND essential options (options needed for 2030 for delivery of 50 GW offshore wind), and 38 optimal schemes from this NOA 2021/22 Refresh analysis. These scheme together are a total cost of £21.7bn. • It identified 11 HND essential options whose delivery is currently estimated beyond 2030 and	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this document by facilitating the connection of offshore renewable energy generators to the electricity system.

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		require acceleration to facilitate current Government targets. The NOA 2021/22 Refresh has also recommended 26 asset-based options for delivery from 2031 onwards with a total cost of £6.2bn. Four of these schemes received a "Proceed" recommendation showing they are needed on their earliest in-service date.	
Pathway to 2030 Holistic Network Design	This document sets out the network requirements to facilitate the connection of the 23 GW of in scope offshore wind projects. When combined with existing offshore wind projects and those already further advanced in their development, the HND should enable the connection of 50GW of offshore wind in Great Britain by 2030. This is a detailed document aimed at those who have a specific interest in the HND: a high-level summary can be found in the Pathway to 2030 document.	• The HND identifies 18 offshore wind farms to connect to the transmission network via radial and coordinated connections by 2030. • The HND moves from individual, point-to-point connections to a more coordinated approach, considering future projects and infrastructure sharing. • Environmental impacts should be avoided, minimised or mitigated by the network design, and best practice environmental management incorporated in the network design. • A coordinated offshore network will reduce the requirement for curtailment of wind generation due to network constraints. This will lead to a reduction in cumulative CO2 emissions from gas powered generation between 2030 and 2032 by 2 million tonnes of CO2. • The recommended design reduces the total number of cables being laid to shore by up to a third due to the use of HVDC technology, reducing	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this document by facilitating the connection of offshore renewable energy generators to the electricity system.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		the impact on the seabed. Interconnections are included in the recommended design to provide north to south routes on the east and west coast. • The HND also requires significant investment in our existing onshore system to transport electricity to where it will be used. It recommends 94 reinforcements totalling £21.7 billion, to be delivered by the end of the decade. • Local community impacts should be avoided, minimised, or mitigated by the network design. • The network design should be economic and efficient, estimated to result in £13.1 billion savings in constraint costs that are expected to result from the additional network capacity this infrastructure provides.	
Beyond 2030 A national blueprint for a decarbonised electricity system in Great Britain	The Beyond 2030 report builds on the Holistic Network Design (HND) and makes a set of network recommendations throughout the 2030s. It outlines a proposed £58 billion investment aimed at modernising the UK's electricity grid, mapping the way to a clean, secure and affordable energy future whilst delivering on the Climate Change Committee's Sixth Carbon	• The HND Follow Up Exercise (HNDFUE) is incorporated into the Beyond 2030 publication and consists of those ScotWind leaseholders (21GW) which were not included in the HND in July 2022. • This plan facilitates the connection of an additional 21 GW of offshore wind, laying the foundations for a decarbonised electricity system in Great Britain. • Combined with the HND, this design will see over three times as much undersea cabling laid compared with new onshore routes, linking	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this document by facilitating the connection of offshore renewable energy generators to the electricity system.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	Budget and Crown Estate Scotland's ScotWind leasing round. The investment is designed to address the increasing demand for electricity and the UK's shift towards decarbonisation by 2035.	electricity being produced in the seas around our shores onto the mainland at appropriate points. • There is a need for reinforcement from North East Scotland to North West England, to provide north-south transfer of power. This could potentially form a new arterial transmission route. Furthermore, by enhancing the capacity between the west coast and the east coast of England, the links between the primary arterial routes are strengthened. • By enabling the integration of more home grown and low carbon technologies, this plan delivers cheaper electricity for consumers than fossil fuel alternatives, by reducing our reliance on imported gas which has recently been subject to high price volatility. • This will create and sustain over 20,000 jobs annually, with 90 per cent of these benefits being felt outside of London and the South East of England. • With little over a decade to 2035, progress must be swift and coordinated if we are to meet our Sixth Carbon Budget target. Further design optimisation will be required to ensure impacts on communities are minimised and wider benefits are seized upon.	
Beyond 2030: Celtic Sea	This document outlines a strategic plan to connect up to	• The design facilitates the connection of The Crown Estate's (TCE) Floating Offshore Wind	The draft HND Implementation Plan has a key role to play in furthering

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	4.5GW of floating offshore wind capacity in the Celtic Sea.	Leasing Round 5, with an opportunity to create up to 4.5 GW of renewable energy capacity in the Celtic Sea. • Recommended Design connects 3 GW into South Wales and 1.5 GW into the South West. Each of the proposed offshore wind farms has its own connection to the onshore electricity network, with Project Development Area (PDA) 2 being a high voltage direct current (HVDC) connection into the potential new South Wales Connection Node (SWCN). Meanwhile, connections from PDA 1 and PDA 3 use high voltage alternating current (HVAC) technology with routes to Carmarthenshire and North Devon. • The design creates opportunities for South Wales and the South West regions to continue to play an important part in Great Britain's green industrial revolution. • The connections into South Wales and South West England can provide a catalyst for coordination with future green energy developments in the area. • The design balances cost, deliverability, operability and impact on local communities and the environment.	the ambitions set out in this document by facilitating the connection of offshore renewable energy generators to the electricity system.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Beyond 2030 INTOG	The National Energy System Operator (NESO) has carried out a holistic network design (HND) exercise to recommend how to connect a collection of in scope INTOG projects to the onshore electricity network. This report outlines the recommended design. This builds on top of previous design recommendations we have made for other projects as part of the Pathway to 2030, Beyond 2030 and Beyond 2030: Celtic Sea publications.	• While the INTOG leasing round includes twelve different projects, there are only six in scope of this design process. • The final INTOG recommended design provides bay availability to all TOG projects by 2030, and a coordinated yet flexible connection for both IN projects. • The IN element of this design features coordination between the two IN projects, and then a direct link to Longside 132kV. • The TOG element of this design features three HVDC connections from the in scope TOG projects to shore. • The recommended design connects innovation projects in a manner which retains the benefits of offshore project coordination, while providing flexibility for the projects to be designed, built and operated to create a testbed for new innovative offshore wind technologies. • Using onshore interface points with the earliest availability dates, the oil and gas demand can be connected as soon as possible, with the opportunity coming later to export electricity to the onshore grid. This maximises the emission reduction benefits, although we do acknowledge the later export creates risks for developers.	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this document by facilitating the connection of offshore renewable energy generators to the electricity system.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• The recommended design enables TOG projects to connect to the onshore network to provide electricity to offshore oil and gas platforms to electrify and decarbonise. Our design provides a connection that reduces impact on the environment and local communities, while remaining deliverable, economic and efficient. • All projects within the INTOG leasing round can make a meaningful contribution to the UK's wider net-zero targets. Innovative new offshore wind technologies will expand industry knowledge of this technology type, and the decarbonisation of offshore oil and gas can unlock large emissions reductions and support jobs in the North of Scotland as the energy industry transitions to a net-zero future.	
UK Offshore Energy Plan and SEA 3 (OESEA3). Department of Energy and Climate Change 2016	A Strategic Environmental Assessment (SEA) of a draft plan/programme to enable future renewable leasing for offshore wind, wave and tidal devices and licensing/leasing for seaward oil and gas rounds, hydrocarbon and carbon dioxide gas storage. The renewable energy elements of the draft plan/programme cover parts of the UK Exclusive Economic Zone and the	The OESEA 3 was conducted to: • Consider the environmental implications of DECC's draft plan/programme to enable further licensing/leasing for offshore energy (oil and gas, hydrocarbon gas storage, carbon dioxide storage and marine renewables including wind, wave, tidal stream and tidal range). This includes consideration of the implications of alternatives to the plan/programme and consideration of potential interactions with other users of the sea. • Inform the UK Government's decisions on the draft plan/programme	The draft HND Implementation Plan should have consideration for this plan, as it provides information on renewable leasing and licensing of offshore renewable energy projects which may require transmission networks in the future.

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	territorial waters of England and Wales.	• Provide routes for public and stakeholder participation in the process.	
UK Offshore Energy Strategic Environmental Assessment 4 (OESEA4) 2022	A Strategic Environmental Assessment (SEA) of a draft plan/programme to enable future renewable leasing for offshore wind, wave and tidal devices and licensing/leasing for seaward oil and gas rounds, hydrocarbon and carbon dioxide gas storage. The renewable energy elements of the draft plan/programme cover parts of the UK Exclusive Economic Zone and the territorial waters of England and Wales.	The OESEA4 was conducted to: • Consider the environmental implications of DECC's draft plan/programme to enable further licensing/leasing for offshore energy (oil and gas, hydrocarbon gas storage, carbon dioxide storage and marine renewables including wind, wave, tidal stream and tidal range). This includes consideration of the implications of alternatives to the plan/programme and consideration of potential interactions with other users of the sea. • Inform the UK Government's decisions on the draft plan/programme • Provide routes for public and stakeholder participation in the process.	The draft HND Implementation Plan should have consideration for this plan, as it provides information on renewable leasing and licensing of offshore renewable energy projects which may require transmission networks in the future.
Offshore Wind Leasing Round 4 (Regions Refinement Report). The Crown Estate 2019	A report which undertakes significant spatial analysis and engagement on offshore wind resource and constraints at a strategic level across Northern Irish, English and Welsh waters, to support the Offshore Wind Leasing Round 4 Process. The aim is to identify and characterise most favourable areas of seabed for offshore	The regions refinement process has identified: • Ten regions that will not be taken forward in Round 4; • Four regions of seabed that remain unchanged since November 2018 and will be used to form relevant bidding areas in Round 4; and Four regions of seabed that have been modified since November 2018 based on specific constraints and stakeholder feedback, with the modified	The draft HND Implementation Plan should have consideration for this report, as it provides information on UK regions that have been identified as favourable for offshore wind development with lower constraint levels, for which transmission infrastructure is a component.

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	wind development with relatively lower levels of constraint.	boundaries used to form relevant Bidding Areas in Round 4 in refined form.	
Broad Horizons: Key Resource areas for offshore wind. Everoze Report, commissioned by The Crown Estate 2020	A study which maps the 'key resource areas' for offshore wind enabling early conversations over future development potentials in English, Welsh and Northern Irish waters. The evolving technology landscape was surveyed to assess how practical limits to installation of offshore wind will change until 2040.	The report identifies the future technology profiles for nineteen different resource areas Key findings include: • Advances in engineering will expand the technical reach of offshore wind. • Floating wind and fixed foundation are complementary technologies. There is no one-size-fits-all technology solution.	The draft HND Implementation Plan should have consideration for this report, as it provides information on key resource areas and which technology is best suited to different regions, for which transmission infrastructure is a component.
Marine and Coastal Access Act 2009	The Act introduces a new system of marine management. This includes a new marine planning system, which makes provision for a statement of the Government's general policies, and the general policies of each of the devolved administrations, for the marine environment, and also for marine plans which will set out in more detail what is to	The purpose of this licensing system is to aid industry and encourage investment by enabling more strategic decisions to be made about what activities are permissible in the marine environment. The overall objective of marine licensing is to regulate sustainable development in a cohesive and fair manner. The key features of the new system include • The definition of marine licensable activities; • exempt activities; • fees and charges;	The draft HND Implementation Plan should consider the implications of this Act with developmental infrastructure options within the plan that may impact on coastal and marine areas. A Marine Conservation Zone Assessment is being undertaken for the HND Implementation Plan, to ensure that its implementation will not adversely affect MCZs.

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	happen in the different parts of the areas to which they relate. The Act includes provision changing the system for licensing the carrying on of activities in the marine environment. It also provides for the designation of conservation zones. It changes the way marine fisheries are managed at a national and a local level and modifies the way licensing, conservation and fisheries rules are enforced. It allows for designation of an Exclusive Economic Zone for the UK, and for the creation of a Welsh Zone in the sea adjacent to Wales. The Act also amends the system for managing migratory and freshwater fish and enables recreational access to the English and Welsh coast.	• implementation of measures for sanctioning and enforcement; and • making appeals against licensing decisions, statutory notices and monetary penalties.	
UK Marine Policy Statement 2011	The Marine Policy Statement (MPS) is the framework for preparing Marine Plans and taking decisions affecting the marine environment.	• Achieve integration between different objectives; • Recognise that the demand for use of our seas and the resulting pressures on them will continue to increase;	The draft HND Implementation Plan will have to consider the policies of the MPS in the strategic planning for infrastructure options within the plan that may impact on marine areas. The MPS includes a number of high-

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		• Manage competing demands on the marine area, taking an ecosystem-based approach; • Enable the co-existence of compatible activities wherever possible; and • Integrate with terrestrial planning.	level principles for decision making that should be taken into account, particularly in relation to those impacts associated with Section 2.6.7 Climate change adaptation and mitigation and Section 2.6.8 Coastal change and flooding.
The National Planning Policy Framework (England)	The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally prepared plans can provide for housing and other development in a sustainable manner. Preparing and maintaining up-to-date plans should be seen as a priority in meeting this objective. It also aims to achieve sustainable development by balancing economic, social and environmental objectives.	Plans and decisions should apply a presumption in favour of sustainable development. For plan-making this means that: • All plans should promote a sustainable pattern of development that seeks to: meet the development needs of their area; align growth and infrastructure; improve the environment; mitigate climate change (including by making effective use of land in urban areas) and adapt to its effects; • Strategic policies should, as a minimum, provide for objectively assessed needs for housing and other uses, as well as any needs that cannot be met within neighbouring areas, unless: i. the application of policies in this Framework that protect areas or assets of particular importance provides a strong reason for restricting the overall scale, type or distribution of development in the plan area; or	The draft HND Implementation Plan will have regard to this Framework in the development of any offshore or onshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan

ii. ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole.

For decision-taking this means:

- Approving development proposals that accord with an up-to-date development plan without delay; or
- Where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless:
  i. the application of policies in this Framework that protect areas or assets of particular importance provides a strong reason for refusing the development proposed; or
- any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole, having particular regard to key policies for directing development to sustainable locations, making effective use of land, securing well-designed places and providing affordable homes, individually or in combination.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Planning Policy Wales 2024	Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales. A well-functioning planning system is fundamental for sustainable development and achieving sustainable places	Development plans and proposals should be prepared within the context of the key planning principles of the planning system: • The first stage is to assess plans or proposals against the Strategic and Spatial Choices issues and the national sustainable placemaking outcomes. This is a key gateway test which ensures these important issues are explored with opportunities identified along with potential mitigation measures. • Next, the detailed impact and contribution to Active and Social Places, Productive and Enterprising Places and Distinctive and Natural Places is assessed. The considerations within each of these themes will vary on a case-by-case basis depending on the strategy or proposal concerned. However, the merits, or otherwise, of a strategy or proposal need to be considered in the public interest. • This process will result in a strategy or proposal which contributes to the sustaining of or creation of sustainable places and which delivers on the national sustainable placemaking outcomes. • Planning authorities should ensure that social, economic, environmental and cultural benefits are considered in the decision-making process and assessed in accordance with the five ways of working to ensure a balanced assessment is	The draft HND Implementation Plan will have regard to this Policy in the development of any offshore or onshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		carried out to implement the Well-being of Future Generations Act and the Sustainable Development Principle.	
Technical advice note (TAN) 15: development, flooding and coastal erosion	This advice note provides technical guidance to support the policies set out in Planning Policy Wales and Future Wales in relation to flooding and coastal erosion.	• This advice notes establishes a framework for the assessment of the risk arising from flooding and coastal erosion, it can provide support during applications for development.	The draft HND Implementation Plan will have regard to this advice note in the development of any offshore or onshore transmission infrastructure.
Welsh National Marine Plan	This is the first marine plan for Wales and represents the start of a process of shaping the seas to support economic, social, cultural and environmental objectives. Marine planning aims to guide the sustainable development of the Welsh marine area by setting out how proposals will be considered by decision makers. This document is a marine plan for the inshore and offshore Welsh marine plan regions. It has been prepared and adopted under the Marine and Coastal Access Act (MCAA) 2009.	The vision supports the shared UK vision of clean, healthy, safe, productive and biologically diverse oceans and seas and Welsh Government's commitments to supporting the Well-being of current and future generations. The Plan vision will be delivered through the Plan's objectives supported by general, cross-cutting policies and sector-specific objectives and policies. The main objectives of the Plan include: • Support the sustainable development of the Welsh marine area by contributing across Wales' well-being goals, supporting the Sustainable Management of Natural Resources (SMNR) through decision making and by taking account of the cumulative effects of all uses of the marine environment. • Contribute to a thriving Welsh economy by encouraging economically productive activities	The draft HND Implementation Plan will have regard to this Plan in the development of any offshore or onshore transmission infrastructure. A Marine Conservation Zone Assessment is being undertaken for the HND Implementation Plan, to ensure that its implementation will not adversely affect MCZs.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	This Plan takes a 20-year view whilst recognising that certain activities may need to be planned for beyond this period and others are likely to change significantly during this Plan's lifetime.	and profitable and sustainable businesses that create long-term employment at all skill levels. • Support the opportunity to sustainably develop marine renewable energy resources with the right development in the right place, helping to achieve the UK's energy security and carbon reduction objectives, whilst fully considering other's interests, and ecosystem resilience. • Provide space to support existing and future economic activity through managing multiple uses, encouraging the coexistence of compatible activities, the mitigation of conflicts between users and, where possible, by reducing the displacement of existing activities. • Recognise the significant value of coastal tourism and recreation to the Welsh economy and well-being and ensure such activity and potential for future growth are appropriately safeguarded. • Contribute to supporting the development of vibrant, more equitable, culturally and linguistically distinct, cohesive and resilient coastal communities. • Support enjoyment and stewardship of our coasts and seas and their resources by encouraging equitable and safe access to a resilient marine environment, whilst protecting	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		and promoting valuable landscapes, seascapes and historic assets. • Improve understanding and enable action supporting climate change adaptation and mitigation. • Support the achievement and maintenance of Good Environmental Status (GES) and Good Ecological Status (GeS). • Protect, conserve, restore and enhance marine biodiversity to halt and reverse its decline including supporting the development and functioning of a well-managed and ecologically coherent network of Marine Protected Areas (MPAs) and resilient populations of representative, rare and vulnerable species. • Maintain and enhance the resilience of marine ecosystems and the benefits they provide in order to meet the needs of present and future generations. • Support proportionate, consistent and integrated decision making through implementing forward-looking policies as part of a plan-led, precautionary, risk-based and adaptive approach to managing Welsh seas. • Develop a shared, accessible marine evidence base to support use of sound evidence and provide a mechanism for the unique	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		characteristics and opportunities of the Welsh Marine Area to be better understood.	
Future Wales – the National Plan 2040	This is the national development framework, setting the direction for development in Wales to 2040. It is a development plan with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities.	They key aims of this Plan include: • The planning system will help Wales lead the way in promoting and delivering a competitive, sustainable decarbonised society. • The planning system will ensure wildlife is able to thrive in healthy, diverse habitats, both in urban and rural areas, recognising and valuing the multiple benefits to people and nature. • The environmental, social and cultural value of Wales natural resources (minerals, soils and geodiversity, coast, water, forests and landscape) will be managed, maintained and enhanced, while economic benefits will be utilised sustainably and appropriately by promoting nature-based solutions and a circular economy. • Broadband provision will develop and evolve, beginning with comprehensive coverage of superfast and progressing to ultra-fast fibre, which will help businesses to be more productive, resilient and innovative and improve the way of life for communities and individuals. • Sustainable transport infrastructure will be embedded within development to enable easy and convenient access from one place to another for commuting, business, tourism and	The draft HND Implementation Plan will have regard to this Plan in the development of any offshore or onshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		leisure purposes. Development will focus on active travel and public transport, allied with a reduced reliance on private vehicles. • Development plans will have a forward thinking, positive attitude towards enabling economic development, investment and innovation. • Development plans will enable and support aspirations for large towns and cities to grow, founded on sustainability and urban design principles. Investment in active travel, public transport, flood risk management and green infrastructure will enable population growth and economic growth while reducing pollution and carbon consumption. • Welsh cities, towns and villages will be physically and digitally well-connected places, offering good quality of life to their residents. • In rural areas, job opportunities and community services will be supported to help attract and retain people. • The regional approach will recognise that different parts of Wales work differently to each other, with distinct underlying characteristics and challenges. • Wales aims to have a million Welsh speakers in Wales by 2050 – an increase of almost 80% on current levels.	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
England Marine Plans (North East, East, South East, South, South West and North West Plans)	The England Marine Plans consist of six regional Marine Plans that have been prepared, combining adjacent inshore and offshore marine plans to cover the 11 English Marine Plan areas that cover the inshore and offshore waters of the English marine area. The Marine Plans create a complete and integrated marine planning framework for England to manage the marine environment is used, developed, protected and enhanced. Marine planning addresses the key issues for the marine area, including the coast, estuaries and tidal waters, as well as developments that impact on these areas. The plans include a vision, objectives and detailed policies on how these objectives will be achieved.	The Marine Plans will guide developers, planning authorities and other decision-makers so that their activities happen in a sustainable and coordinated way. The overarching objectives of the six marine plans include: • Promoting sustainable use of marine resources for economic growth by promoting sustainable marine industries such as renewables. • Ensure the protection and enhancement of marine biodiversity, sensitive habitats and the overall health of marine ecosystems. • Support resilience to climate change by addressing risks such as coastal erosion, flooding, and sea-level rise, adapting marine planning to future environmental challenges. • Encourage and integrated approach to marine and coastal management, coordinating with land-based planning and multiple sectors. • Manage the cumulative impacts of human activities in the marine environment to minimise negative environmental effects. •	The draft HND Implementation Plan will have regard to this Plan in the development of any offshore transmission infrastructure.
National Planning Framework 4 (NPF4)	National Planning Framework 4 (NPF4) is the national spatial strategy for Scotland. It sets out	The NPF4 sets out 33 policies which should be implemented through Local Development Plans (LDPs). The intent of some key policies include:	The draft HND Implementation Plan will have regard to this Plan in the

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	the spatial principles, regional priorities, national developments and national planning policy. It should be read as a whole and replaces NPF3 and Scottish Planning Policy.	• To encourage, promote and facilitate development that addresses the global climate emergency and nature crisis. • To encourage, promote and facilitate development that minimises emissions and adapts to the current and future impacts of climate change. • To protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks. • To protect, restore and enhance natural assets making best use of nature-based solutions. • To protect carbon-rich soils, restore peatlands and minimise disturbance to soils from development. • To protect and expand forests, woodland and trees. • To protect and enhance historic environment assets and places, and to enable positive change as a catalyst for the regeneration of places. • To encourage, promote and facilitate compact urban growth and use the land around our towns and cities sustainably. • To encourage, promote and facilitate the reuse of brownfield, vacant and derelict land and empty	development of any onshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		buildings, and to help reduce the need for greenfield development. • To protect coastal communities and assets and support resilience to the impacts of climate change. • To encourage, promote and facilitate all forms of renewable energy development onshore and offshore. This includes energy generation, storage, new and replacement transmission and distribution infrastructure and emerging low-carbon and zero emissions technologies including hydrogen and carbon capture utilisation and storage (CCUS). • To encourage, promote and facilitate development that is consistent with the waste hierarchy. • To encourage, promote and facilitate well designed development that makes successful places by taking a design-led approach and applying the Place Principle. • To encourage, promote and facilitate an infrastructure first approach to land use planning, which puts infrastructure considerations at the heart of placemaking. • To encourage, promote and facilitate development that supports decarbonised solutions to heat and cooling demand and	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		ensure adaptation to more extreme temperatures. • To protect and enhance blue and green infrastructure and their networks. • To strengthen resilience to flood risk by promoting avoidance as a first principle and reducing the vulnerability of existing and future development to flooding. • To protect people and places from environmental harm, mitigate risks arising from safety hazards and encourage, promote and facilitate development that improves health and wellbeing. • To encourage, promote and facilitate the roll-out of digital infrastructure across Scotland to unlock the potential of all our places and the economy. • To encourage, promote and facilitate aquaculture development and minimise any adverse effects on the environment, including cumulative impacts.	
The National Planning Policy Framework (England)	The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally prepared plans can provide for housing and other	Plans and decisions should apply a presumption in favour of sustainable development. For plan-making this means that: • All plans should promote a sustainable pattern of development that seeks to: meet the development needs of their area; align growth and infrastructure; improve the environment;	The draft HND Implementation Plan will have regard to this Framework in the development of any offshore or onshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	development in a sustainable manner. Preparing and maintaining up-to-date plans should be seen as a priority in meeting this objective. It also aims to achieve sustainable development by balancing economic, social and environmental objectives.	mitigate climate change (including by making effective use of land in urban areas) and adapt to its effects; • Strategic policies should, as a minimum, provide for objectively assessed needs for housing and other uses, as well as any needs that cannot be met within neighbouring areas, unless: i. the application of policies in this Framework that protect areas or assets of particular importance provides a strong reason for restricting the overall scale, type or distribution of development in the plan area; or ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole. For decision-taking this means: • Approving development proposals that accord with an up-to-date development plan without delay; or • Where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless: ii. the application of policies in this Framework that protect areas or assets of particular	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		importance provides a strong reason for refusing the development proposed; or iii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole, having particular regard to key policies for directing development to sustainable locations, making effective use of land, securing well-designed places and providing affordable homes, individually or in combination.	
Planning Policy Wales 2024	Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales. A well-functioning planning system is fundamental for sustainable development and achieving sustainable places	Development plans and proposals should be prepared within the context of the key planning principles of the planning system: • The first stage is to assess plans or proposals against the Strategic and Spatial Choices issues and the national sustainable placemaking outcomes. This is a key gateway test which ensures these important issues are explored with opportunities identified along with potential mitigation measures. • Next, the detailed impact and contribution to Active and Social Places, Productive and Enterprising Places and Distinctive and Natural Places is assessed. The considerations within each of these themes will vary on a case-by-case basis depending on the strategy or proposal concerned. However, the merits, or	The draft HND Implementation Plan will have regard to this Policy in the development of any offshore or onshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		otherwise, of a strategy or proposal need to be considered in the public interest. • This process will result in a strategy or proposal which contributes to the sustaining of or creation of sustainable places and which delivers on the national sustainable placemaking outcomes. Planning authorities should ensure that social, economic, environmental and cultural benefits are considered in the decision-making process and assessed in accordance with the five ways of working to ensure a balanced assessment is carried out to implement the Well-being of Future Generations Act and the Sustainable Development Principle.	
Technical advice note (TAN) 15: development, flooding and coastal erosion	This advice note provides technical guidance to support the policies set out in Planning Policy Wales and Future Wales in relation to flooding and coastal erosion.	This advice notes establishes a framework for the assessment of the risk arising from flooding and coastal erosion, it can provide support during applications for development.	The draft HND Implementation Plan will have regard to this advice note in the development of any offshore or onshore transmission infrastructure.
Welsh National Marine Plan	This is the first marine plan for Wales and represents the start of a process of shaping the seas to support economic, social, cultural and environmental objectives. Marine planning aims to guide the sustainable development	The vision supports the shared UK vision of clean, healthy, safe, productive and biologically diverse oceans and seas and Welsh Government's commitments to supporting the Well-being of current and future generations.	The draft HND Implementation Plan will have regard to this Plan in the development of any offshore or onshore transmission infrastructure. A Marine Conservation Zone Assessment is being undertaken for the HND Implementation Plan, to

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	of the Welsh marine area by setting out how proposals will be considered by decision makers. This document is a marine plan for the inshore and offshore Welsh marine plan regions. It has been prepared and adopted under the Marine and Coastal Access Act (MCAA) 2009. This Plan takes a 20-year view whilst recognising that certain activities may need to be planned for beyond this period and others are likely to change significantly during this Plan's lifetime.	The Plan vision will be delivered through the Plan's objectives supported by general, cross-cutting policies and sector-specific objectives and policies. The main objectives of the Plan include: • Support the sustainable development of the Welsh marine area by contributing across Wales' well-being goals, supporting the Sustainable Management of Natural Resources (SMNR) through decision making and by taking account of the cumulative effects of all uses of the marine environment. • Contribute to a thriving Welsh economy by encouraging economically productive activities and profitable and sustainable businesses that create long-term employment at all skill levels. • Support the opportunity to sustainably develop marine renewable energy resources with the right development in the right place, helping to achieve the UK's energy security and carbon reduction objectives, whilst fully considering other's interests, and ecosystem resilience. • Provide space to support existing and future economic activity through managing multiple uses, encouraging the coexistence of compatible activities, the mitigation of conflicts between users and, where possible, by reducing the displacement of existing activities.	ensure that its implementation will not adversely affect MCZs.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Recognise the significant value of coastal tourism and recreation to the Welsh economy and well-being and ensure such activity and potential for future growth are appropriately safeguarded. • Contribute to supporting the development of vibrant, more equitable, culturally and linguistically distinct, cohesive and resilient coastal communities. • Support enjoyment and stewardship of our coasts and seas and their resources by encouraging equitable and safe access to a resilient marine environment, whilst protecting and promoting valuable landscapes, seascapes and historic assets. • Improve understanding and enable action supporting climate change adaptation and mitigation. • Support the achievement and maintenance of Good Environmental Status (GES) and Good Ecological Status (GeS). • Protect, conserve, restore and enhance marine biodiversity to halt and reverse its decline including supporting the development and functioning of a well-managed and ecologically coherent network of Marine Protected Areas (MPAs) and resilient populations of representative, rare and vulnerable species.	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Maintain and enhance the resilience of marine ecosystems and the benefits they provide in order to meet the needs of present and future generations. • Support proportionate, consistent and integrated decision making through implementing forward-looking policies as part of a plan-led, precautionary, risk-based and adaptive approach to managing Welsh seas. • Develop a shared, accessible marine evidence base to support use of sound evidence and provide a mechanism for the unique characteristics and opportunities of the Welsh Marine Area to be better understood.	
Future Wales – the National Plan 2040	This is the national development framework, setting the direction for development in Wales to 2040. It is a development plan with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities.	They key aims of this Plan include: • The planning system will help Wales lead the way in promoting and delivering a competitive, sustainable decarbonised society. • The planning system will ensure wildlife is able to thrive in healthy, diverse habitats, both in urban and rural areas, recognising and valuing the multiple benefits to people and nature. • The environmental, social and cultural value of Wales natural resources (minerals, soils and geodiversity, coast, water, forests and landscape) will be managed, maintained and enhanced, while economic benefits will be utilised	The draft HND Implementation Plan will have regard to this Plan in the development of any offshore or onshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		sustainably and appropriately by promoting nature-based solutions and a circular economy. • Broadband provision will develop and evolve, beginning with comprehensive coverage of superfast and progressing to ultra-fast fibre, which will help businesses to be more productive, resilient and innovative and improve the way of life for communities and individuals. • Sustainable transport infrastructure will be embedded within development to enable easy and convenient access from one place to another for commuting, business, tourism and leisure purposes. Development will focus on active travel and public transport, allied with a reduced reliance on private vehicles. • Development plans will have a forward thinking, positive attitude towards enabling economic development, investment and innovation. • Development plans will enable and support aspirations for large towns and cities to grow, founded on sustainability and urban design principles. Investment in active travel, public transport, flood risk management and green infrastructure will enable population growth and economic growth while reducing pollution and carbon consumption.	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Welsh cities, towns and villages will be physically and digitally well-connected places, offering good quality of life to their residents. • In rural areas, job opportunities and community services will be supported to help attract and retain people. • The regional approach will recognise that different parts of Wales work differently to each other, with distinct underlying characteristics and challenges. Wales aims to have a million Welsh speakers in Wales by 2050 – an increase of almost 80% on current levels.	
England Marine Plans (North East, East, South East, South, South West and North West Plans)	The England Marine Plans consist of six regional Marine Plans that have been prepared, combining adjacent inshore and offshore marine plans to cover the 11 English Marine Plan areas that cover the inshore and offshore waters of the English marine area. The Marine Plans create a complete and integrated marine planning framework for England to manage the marine environment is used,	The Marine Plans will guide developers, planning authorities and other decision-makers so that their activities happen in a sustainable and coordinated way. The overarching objectives of the six marine plans include: • Promoting sustainable use of marine resources for economic growth by promoting sustainable marine industries such as renewables. • Ensure the protection and enhancement of marine biodiversity, sensitive habitats and the overall health of marine ecosystems.	The draft HND Implementation Plan will have regard to this Plan in the development of any offshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	developed, protected and enhanced. Marine planning addresses the key issues for the marine area, including the coast, estuaries and tidal waters, as well as developments that impact on these areas. The plans include a vision, objectives and detailed policies on how these objectives will be achieved.	• Support resilience to climate change by addressing risks such as coastal erosion, flooding, and sea-level rise, adapting marine planning to future environmental challenges. • Encourage and integrated approach to marine and coastal management, coordinating with land-based planning and multiple sectors. • Manage the cumulative impacts of human activities in the marine environment to minimise negative environmental effects.	
National Planning Framework 4 (NPF4)	National Planning Framework 4 (NPF4) is the national spatial strategy for Scotland. It sets out the spatial principles, regional priorities, national developments and national planning policy. It should be read as a whole and replaces NPF3 and Scottish Planning Policy.	The NPF4 sets out 33 policies which should be implemented through Local Development Plans (LDPs). The intent of some key policies include: • To encourage, promote and facilitate development that addresses the global climate emergency and nature crisis. • To encourage, promote and facilitate development that minimises emissions and adapts to the current and future impacts of climate change. • To protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks. • To protect, restore and enhance natural assets making best use of nature-based solutions.	The draft HND Implementation Plan will have regard to this Plan in the development of any onshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• To protect carbon-rich soils, restore peatlands and minimise disturbance to soils from development. • To protect and expand forests, woodland and trees. • To protect and enhance historic environment assets and places, and to enable positive change as a catalyst for the regeneration of places. • To encourage, promote and facilitate compact urban growth and use the land around our towns and cities sustainably. • To encourage, promote and facilitate the reuse of brownfield, vacant and derelict land and empty buildings, and to help reduce the need for greenfield development. • To protect coastal communities and assets and support resilience to the impacts of climate change. • To encourage, promote and facilitate all forms of renewable energy development onshore and offshore. This includes energy generation, storage, new and replacement transmission and distribution infrastructure and emerging low-carbon and zero emissions technologies including hydrogen and carbon capture utilisation and storage (CCUS).	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• To encourage, promote and facilitate development that is consistent with the waste hierarchy. • To encourage, promote and facilitate well designed development that makes successful places by taking a design-led approach and applying the Place Principle. • To encourage, promote and facilitate an infrastructure first approach to land use planning, which puts infrastructure considerations at the heart of placemaking. • To encourage, promote and facilitate development that supports decarbonised solutions to heat and cooling demand and ensure adaptation to more extreme temperatures. • To protect and enhance blue and green infrastructure and their networks. • To strengthen resilience to flood risk by promoting avoidance as a first principle and reducing the vulnerability of existing and future development to flooding. • To protect people and places from environmental harm, mitigate risks arising from safety hazards and encourage, promote and facilitate development that improves health and wellbeing.	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• To encourage, promote and facilitate the roll-out of digital infrastructure across Scotland to unlock the potential of all our places and the economy. • To encourage, promote and facilitate aquaculture development and minimise any adverse effects on the environment, including cumulative impacts.	
(Scotland) National Marine Plan 2015	The Marine Plan aims to provide a strategic framework for managing all developments, activities and interests in or affecting Scotland's marine area (territorial and offshore waters). This is in order to protect Scotland's seas and balancing economic growth with environmental sustainability. Adopted in March 2015, the NMP sets out high-level objectives, general policies and sectoral policies. This plan serves as a long-term strategic document, guiding decision making and informing sectoral plans and projects.	The Marine Act requires that economic, social and marine ecosystem objectives, and objectives relating to the mitigation of and adaption to climate change are set by marine plans. Plans must also state policies for, and in connection with, the sustainable development of the area to which this Plan applies. The main objectives of the plan include: • Promoting sustainable economic development while minimising conflicts between different sectors and considering the marine environment's carrying capacity. • Protecting and enhancing the marine environment, safeguarding the diversity, health and productivity of marine ecosystems and habitats in Scotland. • Coordinating and integrating decision-making processes to facilitate a holistic approach to marine management and planning.	The draft HND Implementation Plan should have regard for the objectives of this plan in the planning and development of offshore transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Encouraging engagement and collaboration involving a wide-range of stakeholders such as industry, environmental organisations and local communities to promote effective marine management. • Considering the impacts of climate change on the marine environment and incorporating mitigation measures in the planning process.	
(Scotland) Marine (Scotland) Act 2010	The Marine (Scotland) Act provides a framework which will help balance competing demands on Scotland's seas. It introduces a duty to protect and enhance the marine environment and includes measures to help boost economic investment and growth in areas such as marine renewables.	• Marine planning: a new statutory marine planning system to sustainably manage the increasing, and often conflicting, demands on our seas • Marine licensing: a simpler licensing system, minimising the number of licences required for development in the marine environment to cut bureaucracy and encourage economic investment • Marine conservation: improved marine nature and historic conservation with new powers to protect and manage areas of importance for marine wildlife, habitats and historic monuments • Seal conservation: much improved protection for seals and a new comprehensive licence system to ensure appropriate management when necessary • Enforcement: a range of enhanced powers of marine conservation and licensing	The draft HND Implementation Plan will have to consider the policies of the Marine (Scotland) Act in the strategic planning for infrastructure options within the plan that may impact on marine areas.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
National Marine Plan 2	This Plan aims to update the previous Marine Plan for Scotland in order to help with commitments to net zero and the effects of climate change and biodiversity loss.	This updated Plan for the National Marine Plan will provide clear direction for sustainable development and use of Scotland's seas for the economy, society and marine environment. It aims to improve alignment with terrestrial planning and support any future licensing and consenting decisions.	The draft HND Implementation Plan will have to consider the policies of the National Marine Plan in the strategic planning for infrastructure options within the plan that may impact on marine areas.
Sectoral marine plan for offshore wind energy	The Plan provides the strategic framework for the first cycle of seabed leasing for commercial-scale offshore wind by Crown Estate Scotland (the 'ScotWind' leasing round).	• This Plan identifies 15 Plan Options ("POs"), split across 4 regions (see Figure 3), which are capable of generating several GW of renewable energy. • The first cycle of ScotWind leasing launched on 10 June 2020, further rounds of ScotWind will occur around 24 months after completion of the first cycle of leasing. • The Plan establishes the spatial footprint for the first cycle of ScotWind and will be kept under review for any future commercial scale leasing rounds or as new evidence comes forth.	The draft HND Implementation Plan should have regard to this plan when facilitating the connection of offshore renewable energy generators to the electricity system.
Draft Sectoral Marine Plan for Offshore Wind Energy (2025)	This Plan is a draft update of the Sectoral Marine Plan for Offshore Wind Energy currently under consultation as of June 2025.	• This Plan provides the spatial framework for the planning of the ScotWind and INTOG leasing rounds, it has been updated to ensure alignment with other relevant plans and programmes and the relevant objectives and principles of these.	The draft HND Implementation Plan should consider the policies of the draft Sectoral marine plan for offshore wind energy in the strategic planning for infrastructure options within the plan that may impact on marine areas.
(Scotland) ScotWind Offshore Wind	ScotWind Leasing – the process of making seabed available for commercial-scale offshore	Key points of the leasing round:	The draft HND Implementation Plan should have consideration for this report, as it provides information on

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Leasing Round (The Crown Estate)	wind projects – will benefit Scottish businesses and communities for decades to come as well as providing a major boost to UK clean energy production.	• There are 20 ScotWind projects with seabed option agreements. The first 17 successful projects were announced in April 2022. These were joined in October 2022 by three further projects, granted agreements through the Clearing process. • These agreements are for up to ten years. Crown Estate Scotland will offer a full seabed lease (enabling projects to be built and operated) once developers have secured the necessary consents, licences, and finance. • ScotWind is 'plan-led'. This means that all sites are within the areas of seabed identified in the Scottish Government's Sectoral Marine Plan for Offshore Wind. • Supply chain commitments were required from the outset. This approach – the first of its kind – will ensure a focus from the earliest stage on supply chain capacity to develop and deliver the projects. • Latest figures, taking into account all 20 projects, now show initial total Scottish commitments total £28.8bn, indicating an average of £1.4bn investment in Scotland per project built, and £1bn investment in Scotland per gigawatt of capacity built. • Offshore wind projects typically take several years to plan, develop, and build. ScotWind	existing and planned developments in Scottish waters.

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		projects are expected to be built from the late 2020s onwards. • 14 of the 20 projects are for floating rather than fixed turbines. Scotland is already a world leader in floating wind test and demonstration. Commercial-scale projects will place Scotland at the forefront of this global technology.	
(Scotland) Sectoral Marine Plan for Offshore Wind for Innovation and Targeted Oil and Gas Decarbonisation (INTOG): Initial Plan Framework.	The Initial Plan Framework (IPF) outlines the process for development of the Sectoral Marine Plan for Innovation and Targeted Oil and Gas (INTOG) Decarbonisation. The IPF also sets out the areas that will be used for future seabed leasing.	Key points of the IPF include: • The IPF provides the updated planning specification and outline of the Areas of Search now approved for use in the leasing process. • The objectives of the INTOG planning process are central to the design and options that have been made available in this IPF. These core objectives are to: – Contribute to the attainment of net zero targets and a cleaner energy transition through targeted decarbonisation of offshore oil and gas assets from offshore wind; – Minimise the potential adverse effects on other marine users, economic sectors and the environment resulting from further offshore wind development; and – Maximise opportunities for economic development, investment and employment in	The draft HND Implementation Plan should have consideration for this report, as it provides information relevant to planned developments in Scottish waters.

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		Scotland, by identifying new sustainable opportunities for offshore wind development. • Projects progressing under the Plan and the related leasing process must meet the set-out requirements that will enable projects to progress through the planning and seabed leasing process under the category of Innovation or the category of Targeted Oil and Gas Decarbonisation. • The final Plan will be shaped by the plan-level assessments that will determine, at a strategic level, if the Plan Options are sustainable. Potential cumulative impacts across Scottish waters from INTOG, in combination with other plans and projects (including the SMP-OWE underpinning ScotWind, operational projects and those progressing through the consenting system), will be identified and assessed as part of the consideration of the impacts of INTOG development. Projects awarded exclusivity by CES remain subject to these plan-level assessments and their adoption as part of the final Plan will be dependent on the outcome of these assessments and plan consultation processes.	
(Scotland) Innovation and Targeted Oil and	The Innovation and Targeted Oil and Gas (INTOG) leasing round is a pioneering initiative by	• The INTOG leasing round aims to attract investment in innovative offshore wind projects in Scottish waters, directly supplying renewable	The draft HND Implementation Plan has a key role to play in furthering the ambitions set out in this

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Gas (INTOG) leasing round	Crown Estate Scotland, designed to support green innovation and help decarbonize North Sea operations.	electricity to oil and gas infrastructure to reduce emissions. • Developers could apply for seabed rights to develop two types of projects: - IN Projects: Small-scale, innovative projects of 100MW or less. - TOG Projects: Large-scale projects of at least 1 GW thats supply renewable electricity directly to oil and gas platforms. • In March 2023, 13 projects were selected out of 19 applications, with five IN projects and eight TOG projects being offered Exclusivity Agreements. The INTOG leasing round is expected to stimulate innovation in Scotland's offshore wind sector, create additional supply chain opportunities and support Scotland's net-zero ambitions.	document by facilitating the connection of offshore renewable energy generators to the electricity system.
The Town and Country Planning (Environmental Impact Assessment) Regulations 2017	These Regulations implement the Environmental Impact Assessment (EIA) Directive in England. They ensure that the requirements of the EIA Directive, which aims to assess the environmental effects of certain public and private projects, are integrated into the planning system in England.	• See EIA Directive.	The draft HND Implementation Plan will have regard to the EIA Directive in the development of any onshore infrastructure. Development and operation of projects may be subject to EIA.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017	These Regulations implement the Environmental Impact Assessment (EIA) Directive in Wales. They ensure that the requirements of the EIA Directive, which aims to assess the environmental effects of certain public and private projects, are integrated into the planning system in Wales.	• See EIA Directive.	The draft HND Implementation Plan will have regard to the EIA Directive in the development of any onshore infrastructure. Development and operation of projects may be subject to EIA.
The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017	These Regulations implement the Environmental Impact Assessment (EIA) Directive in Scotland. They ensure that the requirements of the EIA Directive, which aims to assess the environmental effects of certain public and private projects, are integrated into the planning system in Scotland.	• See EIA Directive.	The draft HND Implementation Plan will have regard to the EIA Directive in the development of any onshore infrastructure. Development and operation of projects may be subject to EIA.
Electricity Networks: Transmission Acceleration Action Plan 2023 (TAAP)	The report sets out a holistic approach looking at every part of the design and delivery of transmission infrastructure, seeking to reduce timelines to a minimum, while engaging communities effectively and providing community benefits for those hosting transmission	It responds to 43 recommendations across 8 themes: • strategic spatial planning • design standards • regulatory approval • planning approval	Electricity Networks: Transmission Acceleration Action Plan 2023 (TAAP)

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	infrastructure. The resulting process the Commissioner proposes is seven years end-to-end, from the point at which the need for new infrastructure is identified, to building and final commissioning.	• supply chain and skills • communities and engagement • outage planning • end-to-end process and next steps Some of the key objectives include: • Faster development of key transmission projects • Coordinated Offshore and Onshore Network Planning • Regulatory reforms • Increase efficiency of permitting and planning • Increase investment in upgraded infrastructure • Incentivising innovation in grid technology • Enhancing grid flexibility • Reducing bottlenecks in transmission capacity • Increased interconnector development • Stakeholder coordination	
Electricity Networks: connections action plan	This action plan sets expectations for the scale and pace of connections reform, providing Ofgem and government direction and	Key actions to release more network capacity and improve the connections process to accelerate connections are laid out. These look across transmission and distribution, including the interface between the two; build on work underway; and cover new and existing connections to	Electricity Networks: connections action plan

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	support on key initiatives, and where these need to go further.	maximise impact, laying the groundwork for longer-term reform. Actions are grouped across the following areas: • Raise entry requirements • Remove stalled projects • Better utilise existing network capacity • Better allocate available network capacity • Improve data and processes and sharpen obligations and incentives • Develop longer term connections process models aligned with strategic planning and market reform.	
Air defence and offshore wind – working together towards Net Zero 2021	The Air Defence and Offshore Wind (ADandOW) Strategy and Implementation Plan (S&IP) sets the direction for collaboration between Government Departments and the Wind Industry in pursuit of identifying, assessing and deploying solutions that will enable the co-existence of AD&OW operations such that neither is unduly or excessively compromised.	In order to achieve the Strategy's aims, it will be necessary to: • Draw on timely evidence which enables a high degree of confidence that mitigation concepts and solutions can be resourced and deployed to meet 2030 targets and Net Zero timelines. • Implement processes that allow the MoD to make irrevocable decisions on the release of wind farm development planning consent conditions. • Confirm that such concepts and solutions are realistic in terms of:	The draft HND Implementation Plan should have regard for the objectives and actions of the AD&OW S&IP, in the planning and operation of offshore infrastructure.

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	Through identification of such solutions, and processes through which they will be deployed, the S&IP will support the achievement of its objective to enable the co-existence of AD&OW. Mitigation of the adverse impacts of wind farms on current AD systems will be a stepping stone towards a longer-term solution that will enable co-existence. This plan contributes to the Government's ambition for the rapid increase of offshore wind developments out to 2030 and beyond.	• performance: laws of Physics as well as against the MoD requirements - time: balancing the time available against the time necessary for deployment - cost: available funding and procurement processes - policy: laws, safety standards, security regulations, etc. Outline how different concepts could be deployed in either a national, regional, clustered and/or project level such that solutions can be implemented according to short, medium and longer-term timelines	
Programme for Government 2024-25: Serving Scotland	This Programme for Government sets out the Scottish Government's commitments to deliver for the people of Scotland. It outlines the measures taken forward in 2024/2025 to deliver on the Government' commitments.	The key objectives aim to address the most pressing challenges facing Scotland and create a more prosperous and equitable society. These include: • Eradicating Child Poverty: Implementing measures to support low-income families and ensure that every child has the opportunity to thrive.	The draft HND Implementation Plan will have regard to this programme and will (in combination with other users and bodies) aim to cumulatively contribute towards the achievement of the objectives of this programme.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Growing the Economy: Promoting sustainable economic growth through investment in innovation, skills, and infrastructure. • Tackling the Climate Emergency: Reducing carbon emissions and enhancing Scotland's resilience to climate change. • Ensuring High-Quality and Sustainable Public Services: Improving the quality and accessibility of public services, including healthcare and education.	
Programme for Government 2025 to 2026	This Programme for Government sets out the Scottish Government's commitments to deliver for the people of Scotland. It outlines the measures taken forward in 2025/2026 to deliver on the Government' commitments.	The key objectives aim to address the most pressing challenges facing Scotland and create a more prosperous and equitable society. These include: • Eradicating Child Poverty: Implementing measures to support low-income families and ensure that every child has the opportunity to thrive. • Growing the Economy: Promoting sustainable economic growth through investment in innovation, skills, and infrastructure. • Tackling the Climate Emergency: Reducing carbon emissions and enhancing Scotland's resilience to climate change. • Ensuring High-Quality and Sustainable Public Services: Improving the quality and accessibility	The draft HND Implementation Plan will have regard to this programme and will (in combination with other users and bodies) aim to cumulatively contribute towards the achievement of the objectives of this programme.

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		of public services, including healthcare and education.	
Plan for Change: Milestones for Mission-Led Government	The Plan for Change is a UK government initiative introduced in December 2024. It outlines an ambitious vision for the nation's future, focusing on five key missions to address challenges in public services, economic growth, and societal opportunities. These milestones aim to drive real improvements in the lives of working people and involve collaboration between public and private sectors, national and local government, business, unions, and civil society.	Building on these foundations, the Government has five national missions that set the direction of change. These are: • Kickstart economic growth – raising living standards and rebuilding Britain • Build an NHS fit for the future – ending hospital backlogs • Safer streets - Putting police back on the beat • Break down the barriers to opportunity- giving children the best start in life Make Britain a clean energy superpower – securing homegrown energy, protecting billpayers and putting GB on track to at least 95% clean power by 2030 whilst accelerating the UK to net zero.	The draft HND Implementation Plan will have regard to this programme and will (in combination with other users and bodies) aim to cumulatively contribute towards the achievement of the objectives of this programme.
Wales Programme for government 2021 to 2026	The Programme for Government 2021 to 2026 in Wales outlines key commitments of the Welsh Government aiming to improve the lives of people across the country by addressing key issues such as sustainability, equality, economic recovery and climate change.	The key objective aims to address the priorities of the Welsh Government including: • A stronger, more fair economy through economic recovery, green growth, fair work and developing a skilled workforce. • Improved health and wellbeing through improvement of the NHS, expanding mental health services and preventative healthcare.	The draft HND Implementation Plan will have regard to this programme and will (in combination with other users and bodies) aim to cumulatively contribute towards the achievement of the objectives of this programme.

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		• Increasing equality through reducing poverty and tackling gender, race and disability related inequality. • A greener Wales through climate action, [protecting and enhancing the Welsh natural environment, and expanding sustainable transport networks. • Cohesive communities through community empowerment, public services reform, and promoting the Welsh language and cultural heritage. • Increased innovation and digital connectivity by improving digital infrastructure, fostering innovation in key sectors and enhancing access to digital services. • Increased global responsibility by improving international relations and ethical trade, as well as contributing to global climate action through collaborative international efforts.	
UK Sustainable Development Strategy - Securing the Future	"Securing the Future", was launched in 2005. It outlines the UK's approach to achieving sustainable development, focusing on integrating economic, social, and environmental goals.	• Sustainable Consumption and Production: Promoting efficient use of resources and reducing waste. • Climate Change and Energy: Reducing greenhouse gas emissions and promoting renewable energy sources.	The draft HND Implementation Plan will have contribute to the aims of this Strategy through the development of transmission infrastructure which facilitates the connection of renewable energy to the grid.

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	The strategy emphasizes the importance of collaboration across government departments and with local authorities to achieve these goals.	• Natural Resource Protection and Environmental Enhancement: Protecting natural resources and biodiversity. • Sustainable Communities: Creating communities that are inclusive, safe, and sustainable. • Fairer World: Promoting sustainable development globally and supporting developing countries.	
Scotland's National Strategy for Economic Transformation	Sets out the priorities for Scotland's economy as well as the actions needed to maximise the opportunities of the next decade to achieve our vision of a wellbeing economy during the transition to net zero.	The Strategy focuses on five policy programmes with the greatest potential benefit and on how to achieve them. These include: • Entrepreneurial People and Culture - Entrepreneurs and an entrepreneurial mindset are vital at a time of change. • New Market Opportunities: Rapid global decarbonisation will represent a profound change, far outwith the control of any government or sector. The transition to net zero is not just an environmental imperative but an economic opportunity – one where Scotland will become world-leading and secure first-mover advantage. • Productive Businesses and Regions - deliver a step change in productivity performance and address regional inequalities in economic activity as well as boosting traditional and digital	The draft HND Implementation Plan may play a role in furthering the ambitions set out in this Plan.

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		infrastructure across every sector, and every region, of the economy. • Skilled Workforce - refocus activity on the transition to net zero, the digital revolution and lifelong training, making sure that employers have the skills they need. • A Fairer and More Equal Society - ensure that work provides a sustainable standard of living and a genuine route out of poverty.	
Prosperity for All: Economic Action Plan (Wales)	The purpose of the Economic Action Plan is to support delivery of Prosperity for All – the national strategy for Wales. The Plan sets out a vision for inclusive growth, built on strong foundations, supercharged industries of the future and productive regions. The Plan drives the twin goals of growing the economy and reducing inequality.	• Inclusive Growth: Ensuring that economic benefits are shared across all regions and communities in Wales, reducing inequality and creating opportunities for everyone. • Strong Foundations: Investing in infrastructure, skills, and innovation to build a resilient and competitive economy. • Supercharged Industries of the Future: Supporting high-growth sectors such as digital, renewable energy, and advanced manufacturing. • Productive Regions: Empowering regions to become more productive and ensuring that economic benefits are felt across Wales.	The draft HND Implementation Plan has potential to support the aims of the Action Plan by contributing to the growth of the low carbon and renewable energy economy.
The Growth Plan 2022	The aim of this plan is to accelerate the UK's economic recovery whilst aiming to boost long-term economic growth. It	• Energy Price Guarantee: To help households and businesses manage high energy costs, the government introduced the Energy Price	The draft HND Implementation Plan has potential to support the aims of the Action Plan by contributing to

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	was designed to stimulate economic growth, attract investment and reduce the tax burden for individuals and businesses.	Guarantee, capping the average household energy bill at £2,500 per year for two years. • Tax Cuts: Significant tax cuts include reducing National Insurance contributions, cancelling the Health and Social Care Levy, and maintaining the Corporation Tax rate at 19%. • Investment Zones: Establishing new Investment Zones with time-limited tax reliefs and planning liberalization to support employment, investment, and home ownership. • Infrastructure and Innovation: Investing in critical infrastructure and cutting red tape to accelerate the delivery of projects such as offshore wind projects, as well as supporting innovation and private investment across the UK.	the growth of the low carbon and renewable energy economy.
A Green Future: Our 25 Year Plan to Improve the Environment	The 25 Year Environment Plan outlines the UK government's strategy to improve the environment and ensure a sustainable future. It aims to safeguard the environment while also future-proofing the economy, focusing on goals such as improving air and water quality, protecting wildlife, and enhancing natural habitats.	Goals and targets are set out to: • Achieve clean air • Achieve clean and plentiful water by improving at least three quarters of our waters to be close to their natural state as soon as is practicable • Achieve a growing and resilient network of land, water and sea that is richer in plants and wildlife • Reduce the risk of harm to people, the environment and the economy from natural	The draft HND Implementation Plan has potential to support the aims of the Action Plan by contributing to the growth of the low carbon and renewable energy economy.

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		hazards including flooding, drought and coastal erosion • Ensure that resources from nature, such as food, fish and timber, are used more sustainably and efficiently • Conserve and enhance the beauty of our natural environment, and make sure it can be enjoyed, used by and cared for by everyone • Take all possible action to mitigate climate change, while adapting to reduce its impact • Minimise waste, reuse materials as much as we can and manage materials at the end of their life to minimise the impact on the environment. • Make sure that chemicals are safely used and managed, and that the levels of harmful chemicals entering the environment (including through agriculture) are significantly reduced • Enhance biosecurity to protect our wildlife and livestock, and boost the resilience of plants and trees	
Well being of Future Generations (Wales) Act 2015	The Well-being of Future Generations (Wales) Act 2015 is a legislation in Wales that requires public bodies to consider the long-term impact of their decisions, work better with people and communities,	The Act sets out seven well-being goals that public bodies must work towards: • A Prosperous Wales: An innovative, productive, and low-carbon society.	The draft HND Implementation Plan will have regard to this Act when developing transmission infrastructure. The Plan has potential to support the goals of the Act by contributing to the growth of the low

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	and address persistent problems such as poverty, health inequalities, and climate change. The Act aims to improve social, economic, and cultural well-being in Wales by promoting sustainable and long-term thinking.	• A Resilient Wales: A nation that maintains and enhances a biodiverse natural environment. • A Healthier Wales: A society in which people's physical and mental well-being is maximized. • A More Equal Wales: A society that enables people to fulfil their potential no matter their background. • A Wales of Cohesive Communities: Attractive, viable, safe, and well-connected communities. • A Wales of Vibrant Culture and Thriving Welsh Language: A society that promotes and protects culture and heritage. • A Globally Responsible Wales: A nation that takes account of its global responsibilities.	carbon and renewable energy economy.
		Water	
The Marine Strategy Regulations 2010	The regulations are implemented to support the European Union's Marine Strategy Framework Directive (MSFD) implementation in the UK. The main aim of the regulations is to establish a framework for the development and implementation of marine strategies, aiming to achieve	The regulations aim to achieve and maintain good environmental status in UK marine waters by implementing the objectives of the European Union's MSFD. The regulations require the production of a 'Marine Strategy' for all UK waters that integrates economic, social and environmental considerations for the protection and sustainable use of marine resources, and that the approach is coordinated across all four	The draft HND Implementation Plan should have regard for the key provisions of the Regulations in the planning and operation of offshore renewable infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	and maintain good environmental status (GES) in UK marine waters. It helps to deliver key international obligations and commitments to protect and preserve the marine environment including those under the UN Convention on the Law of the Sea (UNCLOS), the UN Sustainable Development Goal 14 (to conserve and sustainable use the ocean, seas and marine resources for sustainable development), the OSPAR North-East Atlantic Environment Strategy and the Convention on Biological Diversity.	UK Administrations. It also requires cooperation with other countries sharing our seas. Key provisions of the regulations include: • Marine Strategy Unit (MSU) establishment within each country to develop and coordinate marine strategy implementation. • Marine Region identification. • Environmental target setting within each region to achieve or maintain GES. • Monitoring and assessment to gather data on the environmental status of marine waters and the impact of anthropogenic activities on those waters. • The development and implementation of the programmes of measures to achieve GES, considering the monitoring and assessment results. • Strategy and progress reporting, and regular reviews of strategy and measure effectiveness.	
The Clean Maritime Plan/ Maritime 2050 Strategy	The Clean Maritime Plan is a roadmap to achieve a national action plan on the UK's shipping emissions.	The Plan has ten strategic ambitions, aiming to have the UK lead the way in taking action to achieve clean maritime growth. It encompasses the maritime commitments within the Clean Air Strategy.	The draft HND Implementation Plan could have implications for helping to achieve net zero emissions for the maritime industry.

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Water Environment (Water Framework Directive) (England and Wales) Regulations 2017	These regulations implement the Water Framework Directive 2000/60/EC in in England and Wales, aiming to protect and manage water resources effectively across river basin districts.	• Place a responsibility on England and Wales to try to ensure that all inland and coastal waters reach at least "good status" by 2027(or good ecological potential for artificial or heavily modified water bodies) • Implementation of management planning at river basin level, to achieve this target, linking with other key policy areas such as agriculture, land use, biodiversity, tourism and flood protection through a river basin management plan (RBMP). This sets out a programme of measures to be implemented over 6-year cycles aimed at improving water body status.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Water Framework Directive in the planning and construction of transmission infrastructure. Environmental protection objectives of the Directive are reflected in the SEOs for Water.
The Water Environment and Water Services (Scotland) Act 2003 (Modification of Part 1) Regulations 2015	Transpose the Water Framework Directive (2000/60/EC) and other water quality Directives into Scottish legislation.	• Place a responsibility on Scotland to try to ensure that all inland and coastal waters reach at least "good status" (or good ecological potential for artificial or heavily modified water bodies); • Implementation of management planning at river basin level, to achieve this target, linking with other key policy areas such as agriculture, land use, biodiversity, tourism and flood protection through a river basin management plan (RBMP). This sets out a programme of measures to be implemented over 6-year cycles aimed at improving water body status.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Water Framework Directive in the planning and construction of transmission infrastructure. Environmental protection objectives of the Directive are reflected in the SEOs for Water.
Water Environment (Controlled Activities) (Scotland)	These Regulations apply controls over activities which	The following activities are covered by the Regulations:	The draft HND Implementation Plan should have regard for the environmental protection objectives

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Amendment Regulations 2017 (CAR)	may affect Scotland's water environment.	• Discharges • Diffuse pollution • Abstractions • Engineering works in inland waters • Groundwater Registration is required for low-risk activities which may cumulatively harm the water environment. A licence is required if site-specific controls are needed, particularly if constraints on the activity are proposed.	of these Regulations in the planning of transmission infrastructure, relating to the potential for cumulative effects on the water environment. Environmental protection objectives of the Directive are reflected in the SEOs for Water.
The Water Environment (Miscellaneous) (Scotland) Regulations 2017	These Regulations amend the Water Environment (Controlled Activities) (Scotland) Regulations 2011 ("the Principal Regulations").	The regulations are amendments to the CAR regulations. Enhances licencing and determination. Integration with other legislation and improved recording-keeping and transparency.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations in the planning and construction of transmission infrastructure. Environmental protection objectives of the Regulations are reflected in the SEOs for Water.
The Water Environment (Remedial Measures) (Scotland) Regulations 2016	These regulations provide for the Scottish Environment Protection Agency (SEPA) to serve a remedial measures notice on an "appropriate person", requiring that person to	SEPA may issue a remedial measures notice where: • The appropriate person owns, manages, maintains or is otherwise responsible for an artificial structure which, by virtue of its impact on the hydromorphological characteristics of a body	The draft HND Implementation Plan will be obliged to comply with the requirements of the Regulations and to prevent environmental damage. Development and operation of electrical transmission infrastructure

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	undertake specified remedial measures.	of water, is likely to prevent or delay the achievement of an environmental objective; • it is necessary or expedient to require the appropriate person to undertake the remedial measures for the purposes of facilitating the achievement of that objective; and • the measures specified in the notice are necessary and proportionate for those purposes.	should aim to cause no damage to the water environment.
The Water Environment (Amendment of Part IIA of the Environmental Protection Act 1990: Contaminated Land) (Scotland) Regulations 2016	These Regulations set out the circumstances in which a remediation notice under Part IIA of that Act (contaminated land) may not be served where the Water Environment (Controlled Activities) (Scotland) Regulations 2011 apply.	A remediation notice shall not be served if: • the significant harm (if any) and the significant pollution of the water environment if the contaminated land in question is as a result of an activity to which the Water Environment (Controlled Activities) (Scotland) Regulations 2011(2) ("the Regulations") • a notice under regulation 32(2) (enforcement notices) of the Regulations requiring steps to be taken to prevent, mitigate or remedy the harm or pollution in question is or will be served • SEPA has taken or will take steps to prevent, mitigate or remedy the harm or pollution in question	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of these Regulations are reflected in the SEOs for Water.
The Water Environment (River Basin Management Planning etc.)	These Regulations amend the Water Environment (River Basin Management Planning: Further Provision) (Scotland)	The amendments: • Clarify duties of Scottish Ministers and SEPA in preparing and reviewing river basin management plans (RBMPs).	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development

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(Miscellaneous Amendments) (Scotland) Regulations 2015	Regulations 2013 ("the 2013 Regulations") and the Water Environment (Controlled Activities) (Scotland) Regulations 2011 to further protect the water environment.	• Strengthens requirements for consultation and stakeholder engagement during RBMP development. • Aligns planning cycles and reporting deadlines with EU WFD standards. • Ensures timely publication and review of RBMPs and associated environmental objectives. • Updates cross-references and terminology to reflect changes in related legislation. • Enhances consistency across Scotland's water environment regulatory framework. • Reinforces the legal basis for setting and achieving ecological status targets for water bodies. • Facilitates better coordination between water planning and land-use policies.	and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of these Regulations are reflected in the SEOs for Water.
The River Basin Management Plan for Scotland 2021 – 2027	As a requirement of the WFD, the River Basin Management Plan (RBMP) for Scotland 2021-2027 outlines a framework for protecting and improving the water environment across Scotland.	Key aspects include: • Collaboration among the Scottish Government, SEPA, and other authorities to enhance water quality and manage resources effectively. • Focus on creating healthier communities, sustainable land use, and removing barriers to fish migration. • The plan sets environmental objectives for all water bodies in Scotland, including rivers, lochs, and groundwater.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the RBMP. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of these RBMP are reflected in the SEOs for Water.

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		• It is updated every six years to reflect changing conditions and priorities.	
The River Basin Management Plans – updated 2022 (England)	As a requirement of the WFD, the River Basin Management Plan (RBMP) for England outlines a framework for protecting and improving the water environment across each river basin district.	The plans outline the current environmental condition of each river basin district, challenges for the water environment and a programme of measures to mitigate water quality pressures.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the RBMP. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of these RBMP are reflected in the SEOs for Water.
The River Basin Management Plans 2021-2027 (Wales)	As a requirement of the WFD, the River Basin Management Plans 2021 – 2027 outlines a framework for protecting and improving the water environment across Scotland.	The plans outline the current environmental condition of each river basin district, challenges for the water environment and a programme of measures to mitigate water quality pressures.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the RBMP. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of these RBMP are reflected in the SEOs for Water.
The Shellfish Water Protected Areas	This Direction requires the Environment Agency and Natural Resources Wales to observe the microbial standard	The appropriate agency must ensure that each shellfish water protected area is sampled for the	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Directions. Development

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(England and Wales) Directions 2016	in shellfish water protected areas.	purposes of assessing compliance with the microbial standard	and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of these Directions are reflected in the SEOs for Water.
The Water Environment (Shellfish Water Protected Areas: Environmental Objectives etc.) (Scotland) Regulations 2013	These Regulations make further provision in relation to shellfish water protected areas within the Scotland River Basin District in order to support shellfish life and growth and to contribute to the high quality of shellfish products suitable for human consumption.	These Regulations provide for the designation of any area of coastal water or transitional water as a shellfish water protected area where this is considered necessary or desirable for the protection or development of significant shellfish production. These Regulations also require the SEPA to set environmental objectives for each shellfish water protected area, and to prepare a programme of measures to be applied to achieve those environmental objectives.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Directions. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of these Directions are reflected in the SEOs for Water.
The Bathing Water Regulations 2013	A statutory framework in England that defines the quality of water suitable for recreational bathing, excluding swimming pools.	Under these Regulations, local authorities are mandates to monitor and report on bathing water quality, ensuring that the public is informed about the safety of these waters. The regulations also require an annual list of designated bathing places to be published. For detailed legal text, you can refer to the official legislation document.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
			Environmental protection objectives of these Regulations are reflected in the SEOs for Water
The Bathing Water (Amendment) (England) Regulations 2018	These Regulations amend the Bathing Water Regulations 2013 (S.I. 2013/1675) above which implement, in England and Wales, Directive 2006/7/EC of the European Parliament and of the Council concerning the management of bathing water quality.	The amendments add nine new Bathing Waters to the list in England and remove two existing English Bathing Waters.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of these Regulations are reflected in the SEOs for Water
The Bathing Waters (Scotland) Amendment Regulations 2012	These Regulations transpose Directive 2006/7/EC concerning the management of bathing water quality into Scottish law.	Under these Regulations, local authorities are mandates to monitor and report on bathing water quality, ensuring that the public is informed about the safety of these waters. The regulations also require an annual list of designated bathing places to be published. For detailed legal text, you can refer to the official legislation document.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of these Regulations are reflected in the SEOs for Water

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
National Policy Statement for Water Resources Infrastructure 2023	This Policy relates to the development of nationally significant infrastructure projects for water resources in England.	This Policy statement aims to streamline the planning application process for water infrastructure projects as well as enable the development of new infrastructure and provide planning guidance for applicants.	The draft HND Implementation Plan should have regard for this Policy and its implications for planning.
The Flood Risk Regulations 2009	The Flood Risk Regulations 2009 implement the EU Flood Directive in England. They provide a framework for managing flood risk over a 6-year cycle, and require: Flood Risk Management Plans, setting out measures and actions to reduce the risk.	These Regulations require the Environment Agency and local authorities to • prepare preliminary assessment reports about past floods in each river basin district, and the possible harmful consequences of future floods • identify areas which are at significant risk of flooding • prepare flood risk maps and flood hazard maps for each area which has been identified as being at significant risk • prepare a flood risk management plan for each area which has been identified as being at significant risk.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should aim to not add to flood risks. Environmental protection objectives of these Regulations are reflected in the SEOs for Water
Flood Risk Management (Scotland) Act 2009	An Act of the Scottish Parliament that makes provision for the assessment and sustainable management of flood risks.	This Act requires SEPA to complete flood risk assessments for each flood risk management district, to identify areas at risk of flooding and produce flood risk maps and management plans.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should aim to not add to flood risks.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
			Environmental protection objectives of these Regulations are reflected in the SEOs for Water
The Flood Risk Management (Flood Protection Schemes, Potentially Vulnerable Areas and Local Plan Districts) (Scotland) Regulations 2010	These Regulations make provision in relation to flood protection schemes, potentially vulnerable areas, and local plan districts under the Flood Risk Management (Scotland) Act 2009	The regulations establish procedures for proposing, publishing, and confirming flood protection schemes. Requires public consultation and sets out the approval process. Defines Potentially Vulnerable Areas (PVAs) identifying areas at significant risk of flooding. Local plan districts must have a Local Flood Risk Management Plan. Requires SEPA and responsible authorities to collaborate on assessments, objectives and measures and mandates regular updates and reviews of flood risk plans and schemes.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should aim to not add to flood risks. Environmental protection objectives of these Regulations are reflected in the SEOs for Water
Flood and Water Management Act 2010	This Act aims to reduce flood risk and protect water supplies in England and Wales.	This Act provides guidance on flood risk management and surface water management. This includes the designation of structures and features for flood and coastal erosion risk management purposes, and surface water drainage charges.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment.
The Environmental Liability (Scotland) Regulations 2009	The Regulations bring into force rules to force polluters to prevent and repair damage to water systems, land quality, species and their habitats and protected sites.	These Regulations require an operator of certain economic activities to take preventive action where there is an imminent threat of environmental damage, notify the relevant competent authority of the imminent threat of, or actual, environmental damage, and remedy any environmental damage that it has caused. Prosecution of the polluter can	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		be delayed until the damage is remedied, or remediation works are completed.	aim to cause no damage to the water environment. Environmental protection objectives of these Regulations are reflected in the SEOs for Water
Environmental Damage (Prevention and Remediation) Regulations 2009	The Regulations transpose the requirements of Directive 2004/35 on environmental liability with regard to the prevention and remedying of environmental damage into UK law. They introduce new obligations to ensure that the polluter pays for damage caused by certain activities.	These Regulations apply to damage to protected species, natural habitats, sites of special scientific interest, water and land. They provide that, for certain economic activities, where there is an imminent risk of environmental damage, the operator must take steps to prevent it, and if it has occurred must prevent further damage. Where damage has occurred the enforcing authority must assess the damage and identify remedial measures. It must then serve a remediation notice on the responsible operator specifying what remediation is required. Prosecutions may occur for operators who cause damage through certain activities who do not comply with these Regulations.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of these Regulations are reflected in the SEOs for Water
The Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009	These Regulations implement Directive 2004/35/EC of the European Parliament and of the Council on environmental liability with regard to the prevention and remedying of environmental damage to England and Wales.	The regulations prevent environmental damage to protected species, natural habitats, water and land. Establishes a clear legal framework for identifying, reporting and addressing environmental harm. Holds operators accountable for damaged caused by their activities.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Regulations. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
			Environmental protection objectives of these Regulations are reflected in the SEOs for Water
The Pollution Prevention and Control (Designation of Directives) (England and Wales) Order 2019	This Order transposes certain EU Directives into law in England and Wales which enforce safety standards for protection against the dangers arising from emissions of certain pollutants.	The following topics are covered by this Order: • waste • water quality • air quality • asbestos pollution • public participation in environmental plans and programmes • environmental liability to prevent or remedy environmental damage • environmental noise • chemicals.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Order. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of the Order are reflected in the SEOs for Water
The Waste Management Licensing (Water Environment) (Scotland) Regulations 2006	These regulations amend the Waste Management Licensing Regulations 1994 to make provision for the interaction between the waste management licensing regime under those Regulations and the Water Environment (Controlled Activities) (Scotland) Regulations 2005	These Regulations provide the mechanism by which activities which produce waste which could impact on the water environment are authorised and regulated in Scotland.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Regulations. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
			Environmental protection objectives of the Regulations are reflected in the SEOs for Water
The Water Environment (Register of Protected Areas) (Scotland) Regulations 2004	These Regulations set out requirements relating to the register of protected areas to be prepared and maintained by the Scottish Environment Protection Agency	These regulations require the register of protected areas to include for each area, a description of those areas or bodies of water, maps of the protected areas, and a description of the legislation under which the protected area has been designated.	The draft HND Implementation Plan should have regard for the environmental protection objectives of the Regulations. Development and operation of electrical transmission infrastructure should aim to cause no damage to the water environment. Environmental protection objectives of the Regulations are reflected in the SEOs for Water
Waste			
The Waste (Scotland) Regulations 2012	These Regulations relate to requirements for the collection, transport and treatment of dry recyclable waste and food waste, and for related matters.	Under these Regulations: • Businesses are to present metal, plastic, glass, paper and card for separate collection • There is a ban on any metal, plastic, glass, paper and card collected separately for recycling from going to incineration or landfill from 2014. • The use of macerators to dispose of food waste in the sewer system will be banned from 1 January 2016	The draft HND Implementation Plan should consider the implications of these Regulations with developmental infrastructure options within the Plan which are likely to result in waste being generated.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Circular Economy (Scotland) Act 2024	The Act requires the Scottish Ministers to prepare and publish a circular economy strategy, set circular economy targets, and manage waste reduction and recycling.	There are 11 Key Actions included in this Act achieve a circular economy by 2030, which are grouped under four main strategic aims: 1. Reduce and reuse 2. Modernise recycling 3. Decarbonise disposal 4. Strengthen the circular economy	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Act, in the planning and operation of transmission infrastructure.
Circular economy and waste route map to 2030: consultation	The Circular Economy and Waste Route Map consultation asked for views on the priority actions needed between now and the end of the decade to increase reuse and recycling, cut waste and drive further decarbonisation.	The consultation reflects feedback and is intended to lay the foundations for the system-wide transformation we need to deliver through to 2030. It sets out the priority actions that will unlock progress across the waste hierarchy; and outlines how these actions will be delivered and coordinated to achieve maximum positive impact for communities and businesses. These priorities are founded upon clear evidence, underpinned by a programme of research and analysis.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this consultation document, in the planning, construction and operation of transmission infrastructure.
The Controlled Waste (England and Wales) Regulations 2012	These Regulations classify waste as household, industrial or commercial waste, and also lists the types of waste for which local authorities may make a charge for collection and disposal, in England and Wales.	The regulations outline the classification of waste based on origin and use. Defines charging powers, allowing local authorities to charge for collection and disposal for certain types of household waste. Clarifies the status of waste from campsites and caravan parks, hostels and residential homes, places of worship and village halls. Updates and replaces previous regulations to align with evolving waste management policies and practices.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Act, in the planning, construction and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		Supports broader goals under the Waste Framework Directive and UK environmental legislation	
The Controlled Waste (England and Wales) (Amendment) (England) Regulations 2023	These Regulations make amendments to the 2012 Regulations above regarding the classification and treatment of construction and demolition waste in England.	These Regulations specifies that waste from construction or demolition works, including preparatory works, is considered industrial waste unless certain conditions are met.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Act, in the planning, construction and operation of transmission infrastructure.
		Cultural Heritage	
Burials Act 1857	This Act regulated burial grounds within the UK.	This Act regulates where and how the deceased may be buried and provides for the exhumation of remains, it makes it illegal to disturb a grave.	The draft HND Implementation Plan should have regard for this Act in the planning and operation of transmission infrastructure.
Scotland's Archaeology Strategy 2015	A 10-year strategy which includes action plans which aim to make archaeology matter for everyone in Scotland and contribute to two higher lever strategies, *Our Place in Time* and *Going Further.*	There are five key strategic aims: 1. Delivering archaeology 2. Enhancing understanding 3. Caring and protecting 4. Encouraging greater engagement 5. Innovation and skills	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Strategy, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Strategy are reflected in the SEO for Cultural Heritage.
Historic Environment Scotland Act 2014	An Act to establish Historic Environment Scotland and to make minor amendments to	The Act sets out Historic Environment Scotland's role and legal status, including changes in processes for the designation of monuments and buildings (scheduling and listing) and for consents relating to scheduled monuments, listed buildings and	The draft HND Implementation Plan should account for this Act. Objectives of the Act are reflected in the SEO for Cultural Heritage.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	the law relating to the historic environment	conservation areas. A right of appeal against certain decisions by Historic Environment Scotland has also been introduced.	
Historic Environment Policy for Scotland	This Policy aims to support good decision making for Scotland's unique places.	This Policy comprises of six key actions to ensure how the historic environment should be managed and place emphasis on full understanding of the historic environment and its cultural significance.	The draft HND Implementation Plan should have regard for the protection objectives of this Policy, in the planning, installation and operation of transmission infrastructure.
Our Past, Our Future – Strategy for Scotland's Historic Environment	This Strategy sets out the national mission to sustain and enhance Scotland's historic environment in the present and into the future.	This Strategy aims to improve the historic environment for the benefit of local communities whilst accounting for the climate and biodiversity crisis. It aims to deliver the transition to net zero and improve resilience to climate change.	The draft HND Implementation Plan should have regard for the objectives of this Strategy, in the planning, installation and operation of transmission infrastructure.
Historic Environment (Wales) Act 2023	An Act which brings together the principal legislation for the conservation of the historic environment in Wales.	The Act contains all the legislation for the protection and management of historic monuments and buildings, conservation areas and other elements of Welsh historic environment. Part 4 of The Act deals with conservation areas and provides for their designation as areas of special architectural or historic interest by planning authorities and their periodic review. There are currently over 500 conservation areas in Wales.	The draft HND Implementation Plan should have regard for the protection objectives of this Act, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Order are reflected in the SEO for Cultural Heritage

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Planning (Listed Buildings and Conservation Areas) Act 1990	An Act which altered the laws on granting of planning permission for building works, notably including those of the listed building system in England and Wales. Now is only Applicable in England since the Historic Environment (Wales) Act 2023.	The Act protects buildings and areas of special architectural or historical interest. Buildings of special architectural or historical interest are placed on a statutory list and consent is required for any works that affect the character of the listed building. Local authorities can designate conservation areas where additional planning controls apply. Authorities must formulate and publish proposals for the preservation and enhancement of conservation areas. Provide legal powers and responsibilities for local planning authorities and the Secretary of State.	The draft HND Implementation Plan should have regard for the protection objectives of this Act, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Order are reflected in the SEO for Cultural Heritage
Planning (Listed Buildings and Conservation Areas) Regulations 1990	These Regulations detail the procedure for applications for listed building consent, for conservation area consent, for the variation or discharge of conditions attached to listed building consents or conservation area consents, and for respective appeals in England.	The regulations support the implementation of the Planning (Listed Buildings and Conservation Areas) Act 1990. The regulations provide procedural rules, ensure transparency and public participation in heritage-related planning decisions, support effective enforcement and oversight of works affecting historic assets, align planning processes with heritage protection goals.	The draft HND Implementation Plan should have regard for the protection objectives of these Regulations, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Order are reflected in the SEO for Cultural Heritage
Planning and Compensation Act 1991	This Act provides provisions for the compulsory acquisition of land for the purpose of facilitating public works. There are provisions made for England, Wales and Scotland	The Act introduces new enforcement powers, development control, control over particular matters, and development plans and simplified planning zones.	The draft HND Implementation Plan should have regard for the protection objectives of this Act, in the planning, installation and operation of transmission infrastructure.

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			Environmental Protection Objectives of the Order are reflected in the SEO for Cultural Heritage
National Lottery Act 1993	An Act which established the National Lottery.	Under this Act, Trustees of the National Heritage Memorial Fund became responsible for the distribution of that proportion of the National Lottery proceeds allocated to the heritage and have to prepare separate accounts for the receipt and allocation of funds allocated to Heritage projects.	The draft HND Implementation Plan should have regard for the protection objectives of this Act, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Order are reflected in the SEO for Cultural Heritage
Treasure Act 1996	The Act is designed to deal with finds of treasure in England, Wales and Northern Ireland.	The Act legally obliges finders of objects which constitute treasure (as defined in the Act) to report their find to their local coroner within 14 days.	The draft HND Implementation Plan should take account for the Act.
National Heritage Act 1997	An Act to extend the powers of the Trustees of the National Heritage Memorial Fund.	The projects for which financial assistance may be given under this section include to: 1. Acquire property of any kind (including land) 2. Construct or convert buildings, 3. Carry out other works, or 4. Provide education or training.	The draft HND Implementation Plan should take account for the Act.
Dealing with Cultural Objects (Offences) Act 2003	An Act that makes it an offence to acquire, dispose of, import, or export tainted cultural objects.	A cultural object is tainted according to this Act if a person removes the object in a case falling within subsection (4) of the Act or he excavates the object,	The draft HND Implementation Plan should take account for the Act.

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		and the removal or excavation constitutes an offence. It is irrelevant whether the object is above or below ground or water.	
Enterprise and Regulatory Reform Act 2013	The Act overall, aims to cut the costs of doing business in Britain, boosting consumer and business confidence and helping the private sector to create jobs.	This Act aims to: • Set the purpose of the UK Green Investment Bank • Improve the employment tribunal system • Strengthen and streamline the UK's competition regime and create a new Competition and Markets Authority • Implement measures from the Red Tape Challenge including changes so that in future civil claims for breach of health and safety duties can only be brought where it can be proved an employer has been negligent • Give shareholders of UK quoted companies binding votes on directors' pay • Modernise the UK's copyright framework • Introduce a power to enable customers to request their transactional data in an electronic format • Simplify regulation	The draft HND Implementation Plan should take account for the Act.
The Planning (Listed Buildings and	These Regulations consolidate with amendments the Planning	The Regulations provide for procedural matters relating to listed building and conservation area	The draft HND Implementation Plan should have regard for the

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Conservation Areas) (Wales) Regulations 2012 (As amended)	(Listed Buildings and Conservation Areas) Regulations 1990 ("the principal Regulations") and subsequent amending instruments, in so far as they apply to Wales.	consents: procedural provisions for compensation and listed building purchase notices (regulation 13); the manner that unopposed revocation or modification of consent orders must be advertised (regulation 14); for the application and modification of legislation in relation to enforcement notices for listed buildings and unlisted buildings in conservation areas (regulations 15 and 16) and notices of listed buildings (regulation 17).	protection objectives of these Regulations, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Order are reflected in the SEO for Cultural Heritage
The Ecclesiastical Exemption (Listed Buildings and Conservation Areas) (Wales) Order 2018	This Order removes the listed buildings ecclesiastical exemption under the Planning (Listed Buildings and Conservation Areas) Act 1990 ("the 1990 Act") in the case of all ecclesiastical buildings other than for those cases falling within article 4.	Under article 4 the exemption is retained in respect of church buildings of the Church in Wales, the Church of England, the Roman Catholic Church, the Methodist Church, the Baptist Union of Great Britain and the Baptist Union of Wales provided that the building in question's primary use is as a place of worship and subject to the restrictions set out in that article.	The draft HND Implementation Plan should take account for this Order.
The Ancient Monuments (Class Consents) Order 1994	This is a legislative order that allows certain classes of works to be carried out on scheduled monuments without the need for scheduled monument consent and applies to England and Wales.	The works for which consent is granted comprise: • Certain agricultural, horticultural and forestry works of the same kind as those carried out lawfully in the same location and on the same spot within that location during the previous six years. • Works executed more than 10 metres below ground level by the British Coal Corporation or their licensees.	The draft HND Implementation Plan should have regard for the protection objectives of this Order, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Order are reflected in the SEO for Cultural Heritage

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Certain works executed by the British Waterways Board. • Certain works for the repair or maintenance of machinery. • Minimum works urgently necessary in the interests of safety or health subject to giving subsequent notice in writing as soon as reasonably practicable. • Works executed by the Historic Buildings and Monuments Commission for England ("the Commission"). • Certain works of archaeological evaluation carried out by or on behalf of an applicant for scheduled monument consent. • Certain works carried out in accordance with agreements made between the occupier of a scheduled monument and the Secretary of State or the Commission under section 17 of the Act. • Certain works in respect of which the Secretary of State or the Commission pay grant under section 24 of the Act. • Certain works undertaken by the Royal Commission on the Historical Monuments of England or by the Royal Commission on Ancient and Historical Monuments of Wales.	

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Historic Buildings and Ancient Monuments Act 1953	An Act to provide for the preservation and acquisition of buildings of outstanding historic or architectural interest, their contents and related property.	The Act preserves and protects historic buildings and ancient monuments. Enables the government to support conservation efforts. Promotes public access and appreciation of heritage assets. Establishes legal powers for maintenance and management of historic sites.	The draft HND Implementation Plan should take account for the Act.
Community Empowerment (Scotland) Act 2015	The Act aims to empower community bodies through the ownership or control of land and buildings, and by strengthening their voices in decisions about public services.	There are 11 key topics covered by the Act including: 1. National Outcomes 2. Community planning 3. Participation requests 4. Community rights to buy land 5. Asset transfer requests 6. Delegation of Forestry Commissioners' functions 7. Football clubs 8. Common Good property 9. Allotments 10. Participation in public decision-making 11. Non-domestic rates	The draft HND Implementation Plan should have regard for the protection objectives of this Act, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Act are reflected in the SEO for Cultural Heritage
Planning (Listed Building Consent and Conservation Area Consent Procedure)	These Regulations outline the procedures and requirements for obtaining consent for changes to listed buildings and	The regulations provide a procedural framework for applying for listed building consent and conservation area consent. Ensure proper consultation in heritage related planning decisions.	The draft HND Implementation Plan should have regard for the protection objectives of these Regulations, in the planning,

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
(Scotland) Regulations 2015	within conservation areas in Scotland.	Supports the protection of Scotland's Historic Environment. Aligns with the Planning (Listed Building and Conservation Areas) (Scotland) Act.	installation and operation of transmission infrastructure. Environmental Protection Objectives of these Regulations are reflected in the SEO for Cultural Heritage
The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013	These regulations detail how applications should be processed and the requirements for various planning permissions in Scotland.	Regulation 4 prescribes the classes of development for which pre-application consultation is required, these are the categories of national and major developments. National developments are developments designated as such in the National Planning Framework under section 3A(4) of the Planning etc. (Scotland) Act 2006 ("the 2006 Act"). Major developments are the class of development to be prescribed in Regulations made under section 26A of the Act.	The draft HND Implementation Plan should have regard for the protection objectives of these Regulations, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of these Regulations are reflected in the SEO for Cultural Heritage
The Town and Country Planning (Neighbouring Planning Authorities and Historic Environment) (Scotland) Direction 2015	Regulations which outline the procedures for developments which may impact buildings or areas of historical importance.	Development for which applications must be notified to Scottish Ministers: 1. Development affecting a historic battlefield 2. Development affecting a World Heritage Site 3. Development affecting the site of a scheduled monument or its setting 4. Development affecting a category A listed building or its setting 5. Development affecting land in the district of an adjoining planning authority	The draft HND Implementation Plan should have regard for the protection objectives of these Regulations, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of these Regulations are reflected in the SEO for Cultural Heritage

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
The Scheduled Monument Consent Procedure (Scotland) Regulations 2015	The purpose of these Regulations is to provide for the procedures to be followed by all parties in relation to applications for scheduled monument consent.	Applications for scheduled monument consents must include: 1. a written description of the works 2. the name or location of the scheduled monument to which the works relate or a description of the location of the land 3. the name and address of the applicant or agent on behalf of applicant 4. a plan or drawing, sufficient to identify the area of land to which the works relate 5. such other plans and drawings as are necessary to describe the works 6. one or other of the certificates required under regulation 5	The draft HND Implementation Plan should have regard for the protection objectives of these Regulations, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of these Regulations are reflected in the SEO for Cultural Heritage
Town and Country Planning (Scotland) Act 1997 (as amended)	This Act is the principal piece of legislation governing the use and development of land within Scotland.	The Act establishes a legal framework for land use planning across Scotland. Provides structured plans and policies to guide development and land management. Ensure public participation in planning decisions.	The draft HND Implementation Plan should have regard for the protection objectives of the Act, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Act are reflected in the SEO for Cultural Heritage
The Ancient Monuments (Class	This Order grants scheduled monument consent under Part I	Specified works include:	The draft HND Implementation Plan should have regard for the

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Consents) (Scotland) Order 1996	of the Ancient Monuments and Archaeological Areas Act 1979("the Act") for the execution in Scotland of works of any class or description specified in the Schedule to this Order	1. certain agricultural, horticultural, and forestry works; 2. works executed more than 10 metres below ground level by the Coal Authority or a licensee thereof; 3. certain works executed by the British Waterways Board; 4. certain repair or maintenance works to machinery; 5. certain works urgently necessary in the interests of health or safety; and 6. certain works of archaeological evaluation; 7. certain works under agreements under section 17 of the Act; 8. certain works grant-aided under section 24 of the Act; 9. certain works undertaken by the Royal Commission on the Ancient and Historical Monuments of Scotland.	protection objectives of the Order, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Order are reflected in the SEO for Cultural Heritage.
Ancient Monuments and Archaeological Areas Act 1979	An Act to consolidate and amend the law relating to ancient monuments in England, Scotland and Wales. These Regulations no longer apply to Wales as they have been	The Act (in Part II) introduced the concept of areas of archaeological importance (AAI), city centres of historic significance which receive limited further protection by forcing developers to permit archaeological access prior to building work starting.	The draft HND Implementation Plan should have regard for the protection objectives of the Act, in the planning, installation and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	replaced by the Historic Environment (Wales) Act 2023		Environmental Protection Objectives of the Act are reflected in the SEO for Cultural Heritage.
Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997	An Act which consolidates regulations to preserve and enhance the character or appearance of buildings and areas of special architectural or historic interest.	This Act provides legal protection of listed buildings and conservation areas. Regulates the alterations, demotions and developments that may impact these protected sites. Enables enforcement and remedial action where unauthorised works occur.	The draft HND Implementation Plan should have regard for the protection objectives of the Act, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Act are reflected in the SEO for Cultural Heritage.
Environmental Assessment (Scotland) Act 2005	An Act to make provision for the assessment of the environmental effects of certain plans and programmes.	This Act obliges developers to complete an environmental report which assesses the likely significant effects on the environment of implementing a plan or programme. The Act lists the required inputs to this report and what types of plans and programmes for which this report is required.	The draft HND Implementation Plan should have regard for the protection objectives of this Act, a Strategic Environmental Assessment report for this Plan should satisfy this requirement.
Planning (Scotland) Act 2019	An Act of the Scottish Parliament which makes provisions for how land is developed and used. This Act gives enhanced status to the fourth National Planning Framework (NPF4).	Key provisions within the Act include: • LDPs and NPF to be reviewed every 10 years, instead of five years • Plans must be linked to Development Plan functions and reference sustainable development and achieving national outcomes • Housing targets	The draft HND Implementation Plan should have regard for the protection objectives of the Act, in the planning, installation and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Achieving new outcomes, including improving health and well-being of people, increasing rural population, improving equality and eliminating discrimination, meeting greenhouse gas reduction targets, and securing positive effects for biodiversity	Environmental Protection Objectives of the Act are reflected in the SEO for Cultural Heritage.
Planning (Wales) Act 2015	An Act of the National Assembly for Wales to make provision about national, strategic and local development planning in Wales. The Act requires or permits certain planning applications to be made directly to the Welsh Ministers rather than to local planning authorities and introduces a statutory pre- application procedure for certain categories of planning application.	Key provisions within the Act include: • Strengthening the National Development Framework for Wales • To produce strategic development plans on an area basis • To carry out pre-application consultation • Requirement for planning applications for nationally significant projects to be made to the Welsh Ministers • To improve enforcement and appeal procedures.	The draft HND Implementation Plan should have regard for the protection objectives of the Act, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Act are reflected in the SEO for Cultural Heritage.
Planning Act 2008	An Act which reformed the planning application process in England and Wales, to provide faster development consent system for nationally significant transport, energy, water and waste infrastructure projects.	National Policy Statements (NPS) for major infrastructure projects for each sector were introduced by this Act which provide planning guidance for developers and decision makers regarding: • government policy on the need for nationally significant infrastructure projects (NSIPs)	The draft HND Implementation Plan should have regard for the protection objectives of the Act, in the planning, installation and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• how applications for energy infrastructure will be assessed • the way in which impacts and mitigations will be judged The NPS for Energy covers: • the overarching needs case for different types of energy infrastructure • natural gas electricity generation • renewable electricity generation • gas and oil infrastructure • electricity networks • nuclear power generation	Environmental Protection Objectives of the Act are reflected in the SEO for Cultural Heritage.
Regional Spatial Strategy (RSS)	Regional Spatial Strategies (RSS) are planning frameworks that were introduced in 2004 for regions in England outside London. They identify the scale and distribution of new housing, areas for regeneration, and priorities for environmental and economic development. In Scotland, the Planning (Scotland) Act 2019 requires local authorities to prepare RSS, which serves as a long-term	Key objectives of RSS are to: • establish a 'spatial' vision and strategy specific to the region - for example, identifying in general terms areas for development or regeneration for a period of about 20 years ahead • contribute to the achievement of sustainable development • establish regionally specific policies, which are expected to add to rather than replicate national ones	The draft HND Implementation Plan should have regard for the protection objectives of these Strategies, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Act are reflected in the SEO for Cultural Heritage.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	strategy for strategic development in the area.	• address regional or sub-regional issues that may cross county, unitary authority or district boundaries • outline housing figures for district and unitary authorities to take forward in their local development frameworks • establish priorities for environmental protection and enhancement, and define the 'general extent' of areas of green belt • produce a regional Transport Strategy as part of the wider spatial strategy • outline key priorities for investment, particularly in infrastructure, and identify delivery mechanisms, in order to support development • identify how the region's waste should be dealt with • be consistent with and supportive of other regional frameworks and strategies.	
Future Wales: The National Plan 2040	Future Wales is the national development framework for Wales to 2040 and has development plan status this was published in 2021.	There are 11 key objectives (or outcomes) of this plan, to create a Wales where people: 1. and work in connected, inclusive and healthy places 2. in vibrant rural places with access to homes, jobs and services	The draft HND Implementation Plan should have regard for the protection objectives of the Plan, in the planning, installation and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		3. in distinctive regions that tackle health and socio-economic inequality through sustainable growth 4. in places with a thriving Welsh Language 5. and work in towns and cities which are a focus and springboard for sustainable growth 6. in places where prosperity, innovation and culture are promoted 7. in places where travel is sustainable 8. in places with world-class digital infrastructure 9. in places that sustainably manage their natural resources and reduce pollution 10. in places with biodiverse, resilient and connected ecosystems 11. in places which are decarbonised and climate-resilient	Environmental Protection Objectives of the Plan are reflected in the SEO for Cultural Heritage.
Wales Regional Strategic Development Plans	Strategic Development Plans for the four main regions in Wales, the North, Mid Wales, the South West and the South East. They will consider strategic regional issues including future growth areas, housing demand, economic development,	The plan supports sustainable development by aligning housing, infrastructure, transport and environmental priorities. Promotes collaboration between local authorities. Strengthens regional economic well-being.	The draft HND Implementation Plan should have regard for the protection objectives of these Strategies, in the planning, installation and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	transport and green infrastructure.		Environmental Protection Objectives of these Strategies are reflected in the SEO for Cultural Heritage.
Scotland Regional Spatial Strategies	The Planning (Scotland) Act 2019 introduced a new duty requiring local authorities to prepare an RSS. The RSS is a long-term spatial strategy for the strategic development of an area.	These Strategies are region specific and identify areas for future population growth, align with regional economic strategies and identify key sectors and clusters for future development and investment.	The draft HND Implementation Plan should have regard for the protection objectives of these Strategies, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of these Strategies are reflected in the SEO for Cultural Heritage.
The Protection of Wrecks Act 1973	Am Act that provides protection for designated shipwrecks. It allows for the designation of wrecks due to their historical, archaeological, or artistic value, and also addresses dangerous sites. Applies to England, Wales, Scotland and Northern Ireland.	It is a criminal offence to interfere with a wreck designated under section 1 of the act without a licence. Navigation, angling and bathing are permitted provided this will not interfere with the wreck. A licence is required to dive at the wreck site. Separate licences are required for any disturbance, such as recovery of artifacts or underwater excavation.	The draft HND Implementation Plan should have regard for the protection objectives of the Act, in the planning, installation and operation of transmission infrastructure. Environmental Protection Objectives of the Act are reflected in the SEO for Cultural Heritage.
The Protection of Military Remains Act 1986	An Act to secure the protection from unauthorised interference of the remains of military aircraft and vessels that have crashed, sunk or been stranded and of associated human remains. Applies to England,	It is a criminal offence to interfere with a protected place, to disturb the site or to remove anything from the site. Wrecks are designated by name and can be designated as protected places even if the location of the site is not known. Thus, the wreckage of a British military aircraft is automatically a	The draft HND Implementation Plan should have regard for the protection objectives of the Act, in the planning, installation and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	Wales, Scotland and Northern Ireland.	protected place even if the physical remains have not been previously discovered or identified. Controlled sites must be specifically designated by location, where the site contains the remains of an aircraft or a vessel that crashed, sank or was stranded within the last two hundred years. The Act makes it illegal to conduct any operations (including any diving or excavation) within the controlled site that might disturb the remains unless licensed to do so by the Ministry of Defence.	Environmental Protection Objectives of the Act are reflected in the SEO for Cultural Heritage.
		Landscape	
Nature Conservation (Scotland) Act 2004	An Act to make provision for the conservation of biodiversity and to the conservation and enhancement of Scotland's natural features including Sites of Special Scientific Interest,	Nature Conservation Orders are made through this Act by Scottish Ministers to prohibit or make exception for certain operations on or that may affect Sites of Special Scientific Interest or are considered to be of special interest.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Act, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Act are reflected in the SEOs for Biodiversity, Flora and Fauna; and Landscape and Visual Amenity.
National Parks (Scotland) Act 2000	An Act which sets out four main aims of the national parks of Scotland. It also lays out criteria for what qualifies a park for National Park status, and the	There are 4 main National Park aims: 1. To conserve and enhance the natural and cultural heritage of the area. 2. To promote sustainable use of the natural resources of the area.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Act, in the planning and operation of transmission infrastructure.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	process necessary to create such features.	3. To promote understanding and enjoyment (including enjoyment in the form of recreation) of the special qualities of the area by the public. 4. To promote sustainable economic and social development of the area's communities.	Environmental Protection Objectives of the Act are reflected in the SEOs for Biodiversity, Flora and Fauna; and Landscape and Visual Amenity.
Land Reform (Scotland) Act 2003	An Act which establishes statutory public rights of access to land and makes provisions under which bodies representing rural and crofting communities may buy land.	The act specifically establishes a right to be on land and inland waters for recreational, educational and certain other purposes and a right to cross land. This is subject to restrictions on certain types of land, as laid out in section 6 of the Act, which includes contained structures and compounds, land adjacent to a residential property, school property, private communal gardens, fields in which crops have been sown or are growing, sports fields, and construction sites.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Act, in the planning and operation of transmission infrastructure. Objectives of the Act are reflected in the SEOs for Landscape and Visual Amenity.
Wildlife and Countryside Act 1981	An Act which gives protection to native species (especially those at threat), controls the release of non-native species, enhances the protection of Sites of Special Scientific Interest. This Act Applies to England Scotland and Wales.	The Act includes legislation which accounts for: 1. Protection of wild birds, their eggs and nests 2. Protection of other animals 3. Protection of plants 4. Introduction into the wild of species that are not native to Great Britain or are otherwise banned 5. The import or export of endangered species 6. Nature conservation for: • Sites of Special Scientific Interest	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Act, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Act are reflected in the SEOs for Biodiversity, Flora and Fauna; and Landscape and Visual Amenity.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		• Limestone pavements • National nature reserves • Marine nature reserves (Marine Conservation Zones)	
National Parks and Access to the Countryside Act 1949	An Act which provided the framework for the creation of National Parks and Areas of Outstanding Natural Beauty in England and Wales and also addressed public rights of way and access to open land.	The Act created the National Parks Commission which later became the Countryside Commission and then the Countryside Agency, which became Natural England when it merged with English Nature in 2006. This is the regulatory authority responsible for the management and protection of these areas. Fifteen National Parks have been designated under the Act in total.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Act, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Act are reflected in the SEOs for Biodiversity, Flora and Fauna; and Landscape and Visual Amenity.
The Countryside and Rights of Way Act 2000 (CRoW Act)	An Act which covers England and Wales and gives a public right of access to land mapped as 'open country' (mountain, moor, heath, and down) or mapped areas of registered common land.	Under this Act, people have the right to walk freely over these areas while adhering to The Countryside Code. The Act: • Gives access to land for 'the purposes of open-air recreation' on foot only. • Does not affect or remove any existing rights of access. • Does not prevent landowners and occupiers from allowing access to other land or permitting activities that are not allowed under the Act.	The draft HND Implementation Plan should have regard for the protection objectives of this Act, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Act are reflected in the SEOs for Landscape and Visual Amenity.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
Scotland's Third Land Use Strategy	This Strategy sets out objectives and policies to achieve sustainable land use in Scotland for 2021 to 2026.	The key Land Use objectives are: • Land based businesses working with nature to contribute more to Scotland's prosperity • Responsible stewardship of Scotland's natural resources delivering more benefits to Scotland's people • Urban and rural communities better connected to the land, with more people enjoying the land and positively influencing land use	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Plan, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Plan are reflected in the SEOs for Biodiversity, Flora and Fauna; and Landscape and Visual Amenity.
Scotland's Landscape Charter	Scotland's Landscape Charter encourages determined action from all sectors of society to protect and maintain the Scottish landscape for future generations. A large number of stakeholders and groups have signed up to this Charter, pledging their support.	The Charter suggests best practice standards for developers: 1. Ensure that the siting, design and use of materials in new development are in keeping with, or contribute positively to, the local townscape and landscape. 2. Seek views from the community on development proposals at an early stage and look to incorporate their aspirations for their local landscape. 3. Design the landscape with future climate change in mind, while providing greenspace and maximising opportunities for walking and cycling. 4. Ensure that your organisation has access to landscape expertise which, for new development, will deliver integrated design, implementation	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Charter, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Charter are reflected in the SEOs Landscape and Visual Amenity.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		and management that is sensitive to the landscape.	
Landscape Policy Framework	Scotland's landscape Policy Framework is currently under review.	The Framework sets out the overarching aim: To safeguard and enhance the distinct identity, the diverse character and the special qualities of Scotland's landscapes as a whole, so as to ensure tomorrow's landscapes contribute positively to people's environment and are at least as attractive and valued as they are today.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Framework, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Framework are reflected in the SEOs for Biodiversity, Flora and Fauna; and Landscape and Visual Amenity.
Landscapes review: National Parks and AONBs	Review to consider the next steps for National Parks and Areas of Outstanding Natural Beauty (AONBs) in England.	The Review makes suggestions for how to manage AONBs and National Parks better in the future. The Review focused on five key interlinked areas and summarises proposals for each.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Review, in the planning and operation of transmission infrastructure. Environmental Protection Objectives of the Review are reflected in the SEOs for Biodiversity, Flora and Fauna; and Landscape and Visual Amenity.
National Landscapes: Realising their Potential The Review	An independent review into the designated landscapes of	The review made a total of 69 recommendations to better manage designated landscapes in Wales in the future.	The draft HND Implementation Plan should have regard for the environmental protection objectives of this Review, in the planning and

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
of Designated Landscapes in Wales	Wales, including National Parks and AONBs, published in 2015.		operation of transmission infrastructure. Environmental Protection Objectives of the Review are reflected in the SEOs for Biodiversity, Flora and Fauna; and Landscape and Visual Amenity.
		Regional	
Local Biodiversity Action Plans (LBAPs)	Local Biodiversity Action Plans are a way of encouraging people to work together and deliver a programme of continuing action for biodiversity at a local level. They set out practical steps that aim to help protect biodiversity, enhance and improve biodiversity where possible, and promote biodiversity at a local level.	The plans aims are to conserve and enhance local biodiversity by protecting species and habitats of regional importance. Put national biodiversity strategies into local action. Engage communities, landowners and stakeholders in nature conservation efforts. Supports sustainable land management and planning decisions that promote biodiversity.	The draft HND Implementation Plan should have regard for these plans and look for opportunities to conserve, and, where possible, restore or enhance biodiversity. SEOs for Biodiversity, Flora and Fauna should contribute towards the Environmental Protection Objectives of LBAPs.
Local Development Plans / Draft Plan Strategies	Development Plans set out how an area should look in the future by deciding the type and scale of development and where building should be allowed. Each Council must prepare a development plan for	When preparing a development plan the council should consider • The council's Community Plan, a long-term vision for the social, environmental and economic well-being of the area and its citizens; • The council's Statement of Community Involvement which sets out who, how, where and	The draft HND Implementation Plan should have regard to these plans / strategies in order to take into consideration the local community in transmission infrastructure development.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
	their area in consultation with the local community.	when consultation and policy making is to take place; • Planning Policy and guidance; and • A sustainability appraisal prepared by the council so that economic and social factors are considered alongside environmental factors when developing the plan.	
World Heritage Site Management Plans	UNESCO requires all WHSs to have an appropriate management plan to set out how the site and its Outstanding Universal Value will be protected for present and future generations.	The plans protect and conserve the sites Outstanding Universal Value. Balance conservation and sustainable development with visitor access. Coordinate stakeholders and governance structures to ensure effective site supervision. Align with UNESCO's Operational Guidelines for the implementation of the World Heritage Convention	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Plans, in the planning and operation of transmission infrastructure
National Park Management Plans	Sets out a shared, long-term vision for the National Park.	The Environment Act 1995 set out duties on National Park Authorities (NPAs) to adopt and regularly review National Park Management Plans in England and Wales, while the National Parks (Scotland) Act 2000 requires a National Park Partnership Plan.	The draft HND Implementation Plan should have regard for the environmental protection objectives of these Plans, in the planning and operation of transmission infrastructure
Conservation Area Character Appraisal and Management Plans	Sets out why the conservation area was designated and what its special architectural or historical interest is as well as the issues affecting the special character of the area.	The plans identify and architectural and historical interest in the designation of conservation areas. Preserve or enhance the areas character through planning and development decisions. Engage with communities and stakeholders in understanding local heritage. Set out proactive management	The draft HND Implementation Plan should have regard to these plans in order to take into consideration areas of special character in transmission infrastructure development.

Plan / Programme	High Level Description	Key Objectives, Actions, etc.	Relevance to the HND Implementation Plan
		strategies to address threats and opportunities for improvement.	

Appendix E – SEA Scoring Guidelines



Topic	Objective	Score	Score Description	Example of Effects
Biodiversity, Flora and Fauna	Avoid damage to, and where possible enhance, biodiversity, flora and fauna.	+3	Significant Positive Effects	Potential for increased protection for, or enhancement of, designated species / habitats within International / European designated sites (SACs, SPAs, Ramsar sites).
		+2	Moderate Positive Effects	Potential for increased protection for, or enhancement of, designated species / habitats within national designated sites (MCZs, SSSIs).
		+1	Slight Positive Effects	Potential for increased protection for, or enhancement of, species / habitats within local designated sites. Potential for increased protection for, or enhancement of, protected or priority species / habitats outside designated sites (Annex habitats and species, Priority habitats and species) or to areas of known importance for flora and fauna.
		0	Neutral / No Effects	No potential for effects on species / habitats within international / European, national or local designated sites. No potential or effects on protected or priority species / habitats outside designated sites.
		-1	Slight Negative Effects	Potential for disturbance or damage to species / habitats within local designated sites. Potential for disturbance, loss or damage to protected or priority species / habitats outside designated sites or to areas of known importance for flora and fauna.
		-2	Moderate Negative Effects	Potential for direct and / or long-term disturbance, loss or damage to designated species / habitats within national designated sites. Potential for indirect and / or short-term disturbance, loss or damage to designated species / habitats within international designated sites.
		-3	Significant Negative Effects	Potential for direct and / or long-term disturbance, loss or damage to designated species / habitats within international designated sites.
Population and Human Health	Minimise disruption to the local population, and adverse effects on human health and	+3	Significant Positive Effects	No population within proximity to potential development areas. Facilitation of large scale renewable energy infrastructure that supports a transition away from fossil fuel use with positive human health implications and with potential for long-term large scale employment opportunities.
		+2	Moderate Positive Effects	No population within proximity to potential development areas. Facilitation of medium scale renewable energy infrastructure that supports a transition away from fossil fuel use with positive human health implications and with potential for long-term medium scale employment opportunities.

Topic	Objective	Score	Score Description	Example of Effects
	wellbeing, while maximizing potential benefit to the population.	+1	Slight Positive Effects	No population within proximity to potential development areas. Facilitation of small scale renewable energy infrastructure that supports a transition away from fossil fuel use with positive human health implications and with potential for short-term and / or small-scale employment opportunities.
		0	Neutral / No Effects	No population within proximity to potential development areas. No disruption or displacement of leisure users of the marine area (e.g., sailing, sea angling, beach use). No facilitation of new renewable energy infrastructure that that supports a transition away from fossil fuel use with positive human health implications or employment opportunities.
		-1	Slight Negative Effects	Low population density of generally low deprivation within proximity to potential development areas. Temporary disruption or displacement of a small proportion of leisure users of the marine area (e.g., sailing, beach use).
		-2	Moderate Negative Effects	Moderate population density of generally low to mid deprivation within proximity to potential development areas. Temporary disruption or displacement of a large proportion of leisure users of the marine area (e.g., sailing, beach use).
		-3	Significant Negative Effects	High population density and/or many high deprivation areas within proximity to potential development areas. Permanent disruption or displacement of a significant proportion of leisure users of the marine area (e.g., sailing, sea angling, beach use).
Geology, Soils and Land Use	Minimise damage to the function and quality of the seabed and avoid significant	+3	Significant Positive Effects	Increased protection for protected geological / geomorphological features within international designated sites (UNESCO Geoparks, WHSs). Potential for protection of a significant area of sensitive seabed or high-quality agricultural lands.
		+2	Moderate Positive Effects	Increased protection for protected geological / geomorphological features within national designated sites (SSSIs, MCZs). Potential for protection of a moderate area of sensitive seabed or high-quality agricultural lands.
		+1	Slight Positive Effects	Potential for protection of a small area of sensitive seabed or high-quality agricultural lands.

Topic	Objective	Score	Score Description	Example of Effects
	damage to, or loss of, sensitive onshore land and soils.	0	Neutral / No Effects	No effects on protected geological / geomorphological features within international or national designated sites (UNESCO Geoparks, WHSs, SSSIs, MCZs). No potential for loss of sensitive seabed or high-quality agricultural lands.
		-1	Slight Negative Effects	Potential for temporary disturbance to protected geological / geomorphological features within national designated sites (SSSIs, MCZs). Potential for temporary direct or indirect disturbance or damage to a small to moderate area of sensitive seabed or high-quality agricultural lands.
		-2	Moderate Negative Effects	Potential for direct and / or long-term disturbance / damage to protected geological / geomorphological features within national designated sites (SSSIs, MCZs). Potential for indirect and / or short-term disturbance / damage to protected geological / geomorphological features within international designated sites (UNESCO Geoparks, WHSs). Potential for permanent loss of a small to moderate area of sensitive seabed / temporary damage to a significant area of sensitive seabed or high-quality agricultural lands, peatlands, woodlands. Long-term or permanent alteration to sediment transport in sensitive areas.
		-3	Significant Negative Effects	Potential for direct and / or long-term disturbance / damage to protected geological / geomorphological features within international designated sites (UNESCO Geoparks, WHSs). Potential for permanent loss of a significant area of sensitive seabed or high-quality agricultural lands, peatlands, woodlands.
Water	Avoid impacts on the status or quality of water bodies and avoid interaction with areas of flood risk.	+3	Significant Positive Effects	Potential improvement of water body overall WFD status. Potential improvement in the status of sensitive water bodies. Potential improvement in the status of Marine Strategy Descriptors. Potential for development of significant infrastructure with limited interactions with areas of known flood risk.
		+2	Moderate Positive Effects	Potential for regional improvement of water quality. Decreased potential impediment to the achievement of waterbody objectives under the WFD or Good Environmental Status for Descriptors under the Marine Strategy. Potential for development of infrastructure with limited interactions with areas of known flood risk.
		+1	Slight Positive Effects	Potential for localised improvement of water quality. Potential for development of infrastructure with very limited interactions with areas of known flood risk.

Topic	Objective	Score	Score Description	Example of Effects
		0	Neutral / No Effects	No effects on local water quality or the status of water bodies. No interaction with areas of known flood risk.
		-1	Slight Negative Effects	Potential for short-term or infrequent adverse effects on water quality. Potential for cabling routes to interact with a small number of areas of known flood risk.
		-2	Moderate Negative Effects	Potential for permanent or frequent adverse effects on water quality. Increased potential impediment to the achievement of water body objectives under the WFD, or Good Environmental Status for Descriptors under the Marine Strategy. Potential for cabling routes to interact with many areas of known flood risk.
		-3	Significant Negative Effects	Potential for deterioration of overall WFD status. Potential for deterioration in the status of sensitive water bodies. Potential for deterioration of the status of Marine Strategy Descriptors. Potential for development of onshore substations and/or converter stations within areas of known flood risk.
Air	Minimise risk to local air quality and contribute to improving regional emissions.	+3	Significant Positive Effects	Potential to significantly contribute to renewable energy connection that supports a transition away from fossil fuel use and supports a reduction in fossil fuel use and contributes to air quality requirements in line with the UK Air Quality Strategy and Air Quality Regulations.
		+2	Moderate Positive Effects	Potential to moderately contribute to renewable energy connection that supports a transition away from fossil fuel use and supports a reduction in fossil fuel use and contributes to air quality requirements in line with the UK Air Quality Strategy and Air Quality Regulations.
		+1	Slight Positive Effects	No development in air quality sensitive areas. Potential to slightly contribute to renewable energy connection that supports a transition away from fossil fuel use and supports a reduction in fossil fuel use and contributes to air quality requirements in line with the UK Air Quality Strategy and Air Quality Regulations.
		0	Neutral / No Effects	No development in air quality sensitive areas. No potential to contribute to renewable energy connection that supports a transition away from fossil fuel use and supports a reduction in fossil fuel use and contributes to air quality requirements in line with the UK Air Quality Strategy and Air Quality Regulations.

Topic	Objective	Score	Score Description	Example of Effects
		-1	Slight Negative Effects	Potential for short-term and small-scale air emissions from construction/cable laying.
		-2	Moderate Negative Effects	Potential for long-term, small-scale impacts on air quality in air quality sensitive areas.
		-3	Significant Negative Effects	Potential for long-term, significant impacts on air quality in air quality sensitive areas.
Climatic Factors	Avoid impacts on carbon stocks and potential while contributing to a reduction in GHG emissions.	+3	Significant Positive Effects	Potential to significantly contribute to renewable energy connection that supports a reduction in GHG emissions in line with emission reduction targets of the UK Climate Change Act.
		+2	Moderate Positive Effects	Potential to moderately contribute to renewable energy connection that supports a reduction in GHG emissions in line with emission reduction targets of the UK Climate Change Act.
		+1	Slight Positive Effects	Potential to slightly contribute to renewable energy connection that supports a reduction in GHG emissions in line with emission reduction targets of the UK Climate Change Act.
		0	Neutral / No Effects	No potential to contribute to renewable energy connection that supports a reduction in GHG emissions in line with emission reduction targets of the UK Climate Change Act. No interaction with known areas of blue carbon or onshore habitats that act as carbon sinks.
		-1	Slight Negative Effects	Permanent slight loss / short-term moderate disturbance of known blue carbon habitat or onshore habitats that act as carbon sinks.
		-2	Moderate Negative Effects	Permanent moderate loss of known blue carbon habitat or onshore habitats that act as carbon sinks.
		-3	Significant Negative Effects	Permanent significant loss of known blue carbon habitat or onshore habitats that act as carbon sinks.
Material Assets and	Minimise disruption to other assets	+3	Significant Positive Effects	Potential for creating infrastructure that facilitates a significant scale of new renewable energy, with a significant contribution to government targets to decarbonise the power system by 2030.

Topic	Objective	Score	Score Description	Example of Effects
Infrastructure	and infrastructure while providing robust new renewable energy infrastructure.	+2	Moderate Positive Effects	Potential for creating infrastructure that facilitates a medium scale of new renewable energy, with a moderate contribution to government targets to decarbonise the power system by 2030.
		+1	Slight Positive Effects	Potential for creating infrastructure that facilitates a small scale of new renewable energy, with a slight contribution to government targets to decarbonise the power system by 2030.
		0	Neutral / No Effects	No interaction with other users of the marine area. No interaction with other offshore and onshore infrastructure. No facilitation of new renewable energy, or contribution to government targets to decarbonise the power system by 2030.
		-1	Slight Negative Effects	Potential for short-term slight disruption or displacement of other users of the marine area (shipping, fisheries, military, aviation). Potential for loss of or damage to a small number of other offshore and onshore infrastructure (e.g., cables, pipelines, railway lines, WWTWs).
		-2	Moderate Negative Effects	Potential for long-term moderate disruption or displacement / short-term significant displacement of other users of the marine area (shipping, fisheries, military, aviation). Potential for loss of or damage to a small number of other offshore and onshore infrastructure (e.g., cables, pipelines, railway lines, WWTWs).
		-3	Significant Negative Effects	Potential for long-term significant disruption or displacement of other users of the marine area (shipping, fisheries, military, aviation). Potential for loss of or damage to a moderate to significant number of other offshore and onshore infrastructure (e.g., cables, pipelines, railway lines, WWTWs).
Cultural, Architectural and Archaeological Heritage	Protect, conserve, and where possible enhance designated	+3	Significant Positive Effects	Potential for positive effects on a significant number of designated / non-designated heritage features, sites or their settings, from construction / operation of cables and associated onshore infrastructure.
		+2	Moderate Positive Effects	Potential for positive effects on a moderate number of designated / non-designated heritage features, sites or their settings, from construction / operation of cables and associated onshore infrastructure.

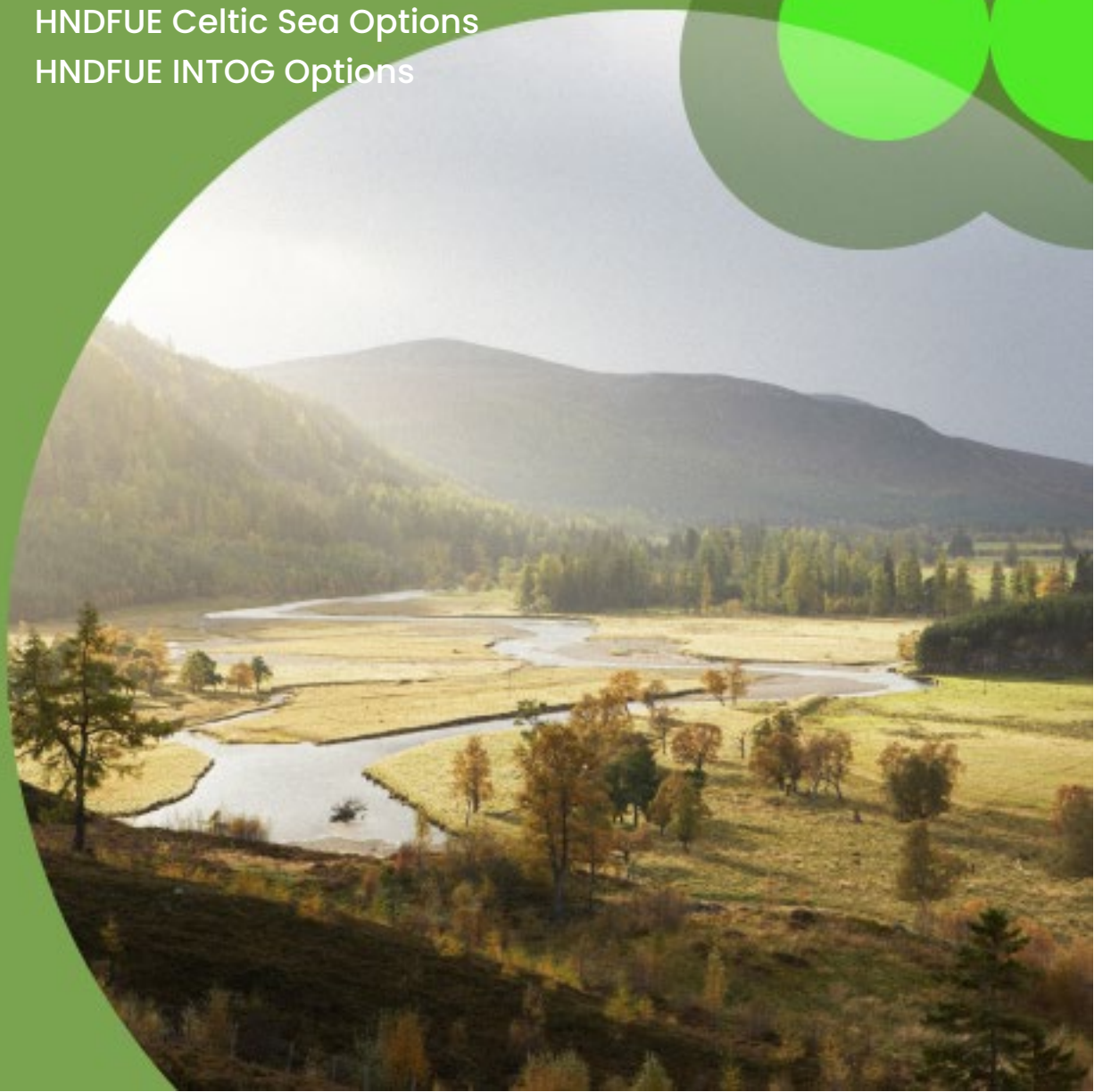
Topic	Objective	Score	Score Description	Example of Effects
	and non-designated heritage assets and their settings.	+1	Slight Positive Effects	Potential for positive effects on a small number of designated / non-designated heritage features, sites or their settings, from construction / operation of cables and associated onshore infrastructure.
		0	Neutral / No Effects	No loss or damage to designated / non-designated heritage features, sites or their settings, from construction / operation of cables and associated onshore infrastructure.
		-1	Slight Negative Effects	Potential for adverse effects on the setting of a small number of designated / non-designated heritage features, sites or their settings from construction / operation of cables and associated onshore infrastructure.
		-2	Moderate Negative Effects	Potential for adverse effects on the setting of a WHS / a large number of designated / non-designated heritage features, sites or their settings from construction / operation of cables and associated onshore infrastructure.
		-3	Significant Negative Effects	Potential for effects within a WHS / unavoidable loss of designated / non-designated heritage features, sites or their settings from construction / operation of cables and associated onshore infrastructure.
Landscape and Visual Amenity	Protect, and where possible enhance, the landscape and seascape character and visual amenity of the GB shoreline.	+3	Significant Positive Effects	Permanent enhancement of designated landscapes and views, the landscape and visual amenity of the GB shoreline. Many receptors.
		+2	Moderate Positive Effects	Potential localised improvement of landscape / seascape and visual amenity. Several receptors.
		+1	Slight Positive Effects	Potential improvement of local views. Few receptors.
		0	Neutral / No Effects	No effects on landscape / seascape quality and visual amenity.
		-1	Slight Negative Effects	Short term / disturbance effects on local views and the local landscape / seascape. Few receptors.
		-2	Moderate Negative Effects	Potential localised adverse effects on, and deterioration of, the landscape / seascape and visual amenity. Several receptors.
		-3	Significant Negative Effects	Permanent adverse effects on, and deterioration of, designated landscapes and views, the landscape / seascape quality and visual amenity of the GB shoreline. Many receptors.

Appendix F - SEA Light Assessment

F.1 SEA Light Assessments of routes
- F.1.1 HND1 Routes
- F.1.2 HNDFUE ScotWind Routes
- F.1.3 HNDFUE Celtic Sea Routes
- F.1.4 HNDFUE INTOG Routes

F.2 SEA Light Assessment of Interface Areas

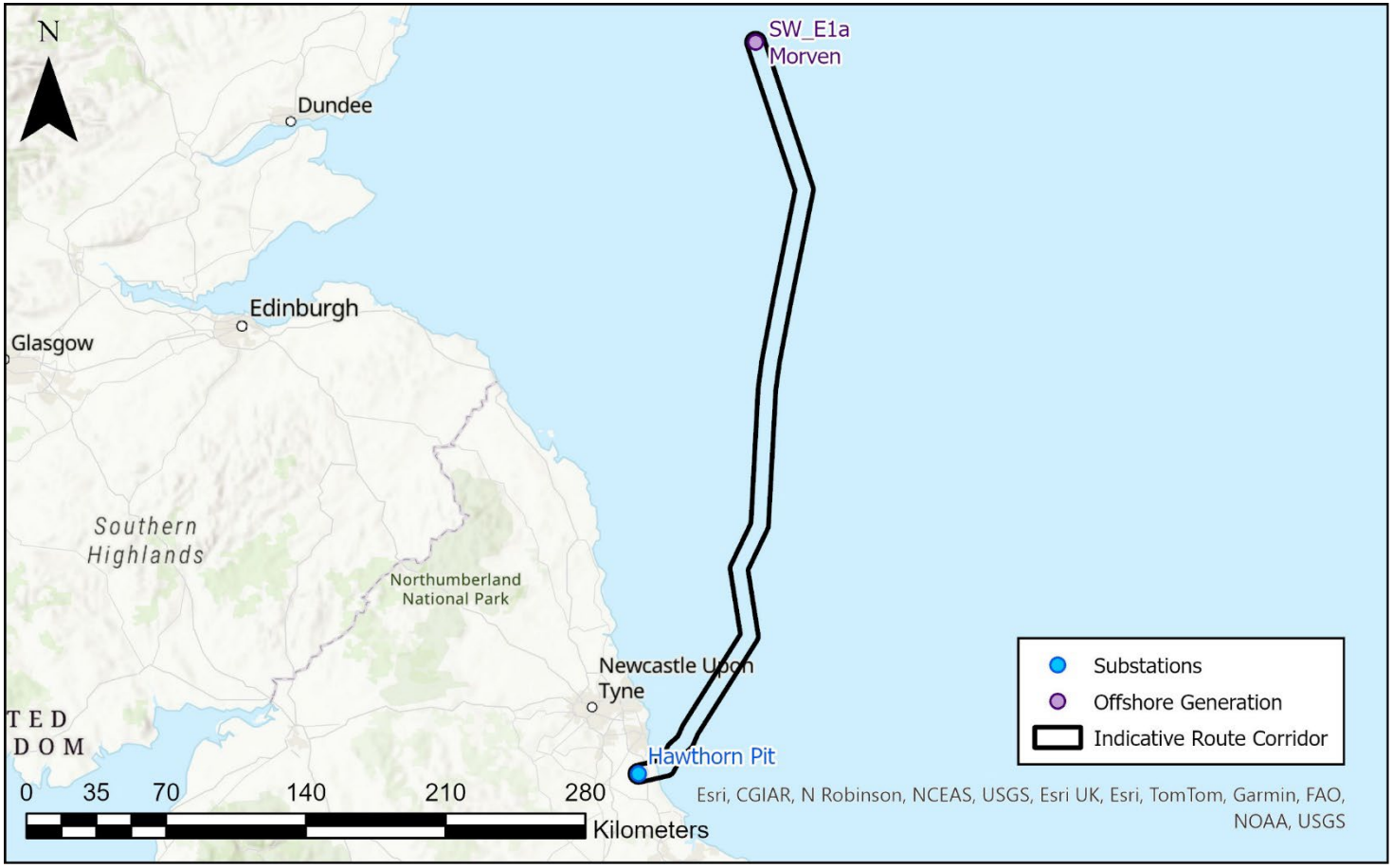
F.3 SEA Light Assessment of Options
- F.3.1 HND1 Options
- F.3.2 HNDFUE ScotWind Options
- F.3.3 HNDFUE Celtic Sea Options
- F.3.4 HNDFUE INTOG Options



F.1 SEA Light Assessments of routes

F.1.1 HND1 Routes

SW_E1a – Hawthorn Pit						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a Morven	Hawthorn Pit	224.7	1500	2 HVDC	1	Y – HND1
Overview of Route						



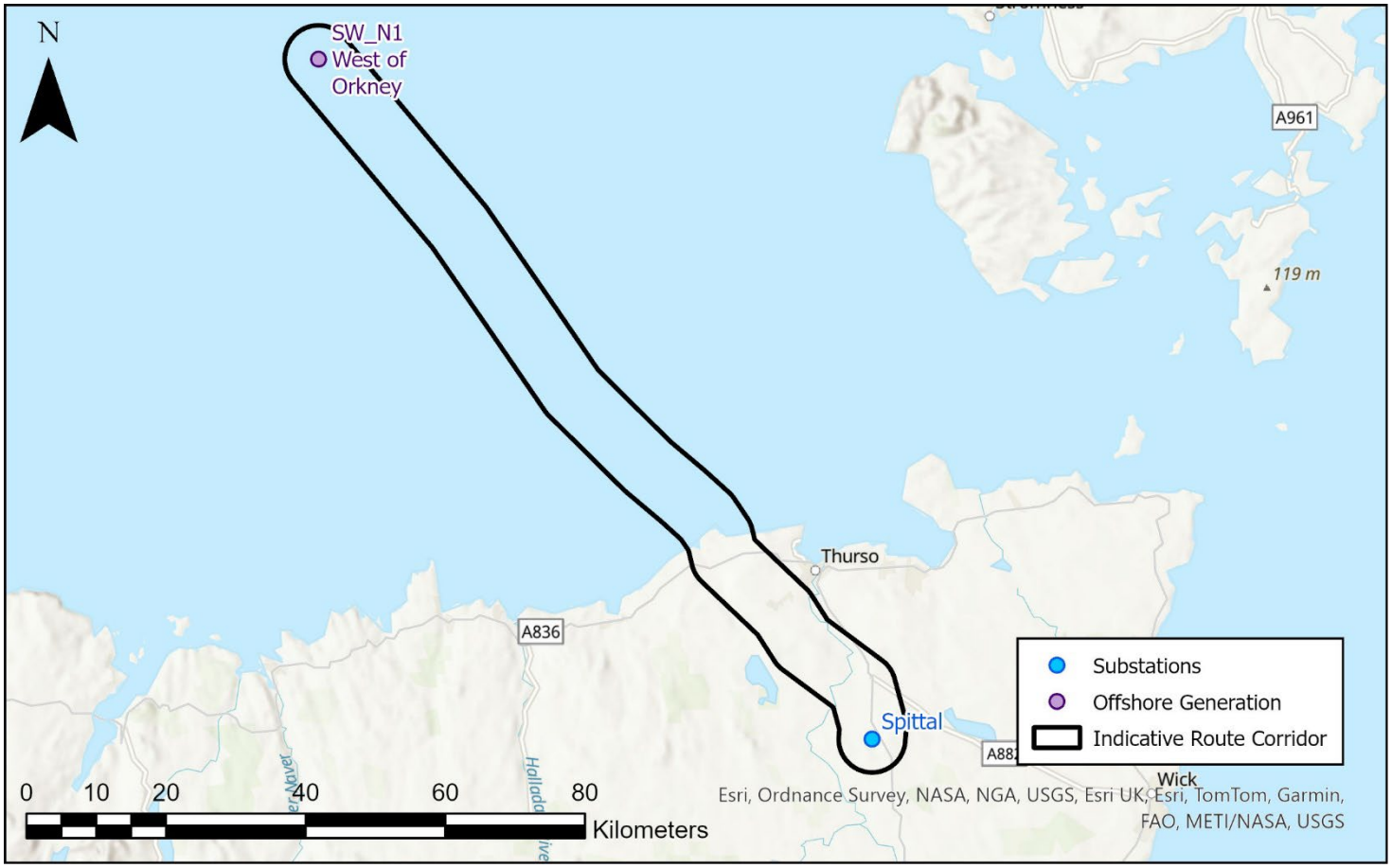
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Durham Coast SAC (designated for vegetated sea cliffs) and Durham Coast SSSI are within the offshore route corridor and the route corridor at landfall. There is limited scope to avoid these sites at landfall and there is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, such as damage to habitats (-2). The North East of Farnes Deep MCZ (designated for subtidal coarse sediment and subtidal sand, subtidal mixed sediments, subtidal mud and Ocean quahog) is within the offshore route corridor but can be avoided. The Eppleton Grassland SSSI (designated for grassland, meadow, scrub and woodland), Hawthorn Dene SSSI (designated for woodland and grassland), Hesledon Moor East SSSI (designated for grassland), Hesledon Moor West SSSI (designated for grassland) and Pig Hill SSSI (designated for grassland) are also within the onshore route corridor but are avoidable. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, which there is limited scope to avoid. There is potential for direct impacts and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities, which may be long-term to permanent in nature in the footprint of infrastructure (-2). The Northumbria Coast IBA is within the route corridor at landfall and there are areas of ancient woodland within the landfall and onshore route corridor, however these can be avoided by the cable route (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban areas of Seaham and Dawdon are within the route corridor at landfall, and the urban areas of Seaham, Dawdon, Murton, South Hetton, and Easington Lane are within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is also a RYA boating area within the offshore and landfall route corridor which can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the boating area during the construction and	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The corridor includes Hawthorn Quarry SSSI, Stony Cut, Cold Hesledon SSSI, Crime Rigg Quarry SSSI and dredge and spoil dumping sites, all of which can be avoided, avoiding the potential for direct impacts (-1). There is also the Durham Coast SSSI and Annex 1 reefs that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor, these will need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided within the onshore corridor but cannot be avoided at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (233 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two offshore cables, the Druridge Bay Military Area, high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, and a railway line located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (two diffusers), two dredge and spoil dumping sites, Seaham Port, onshore infrastructure (National Grid towers, cables and overhead lines), the Dawdon Blast Beach machine gun emplacement and five urban areas (Murton, South Hetton, Easington Lane, Seaham and Dawdon) within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 33 known wreck locations within the offshore route corridor. There are five listed buildings at landfall and 18 within the onshore route corridor, and there are also two Scheduled monuments within the onshore route	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) The Durham Heritage Coast and Durham Coast National Trust lands are within the route corridor at landfall, and the Durham Heritage Coast is also within the onshore route corridor, but these sensitive areas can be avoided, avoiding the potential for direct short-term landscape and visual impacts. The urban areas of Seaham and Dawdon are within the route corridor at landfall, and the urban areas of Seaham, Dawdon, Murton, South Hetton, and Easington Lane are within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The general area of the landfall is shared with the proposed east coast bootstrap from Branxton to Hawthorn Pit. Proposed cables connecting at Branxton, Blyth and the offshore connection SW_E1a to SW_R4_2 intersect offshore but not within a designated site, although there may be sensitive habitats present that could be impacted by cable protection.				

SW_N1 - Banniskirk/Spittal						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_N1 West of Orkney	Banniskirk/Spittal	68.4	2000	4 - 6 AC	4 - 6	Y – HND1
Overview of Route						



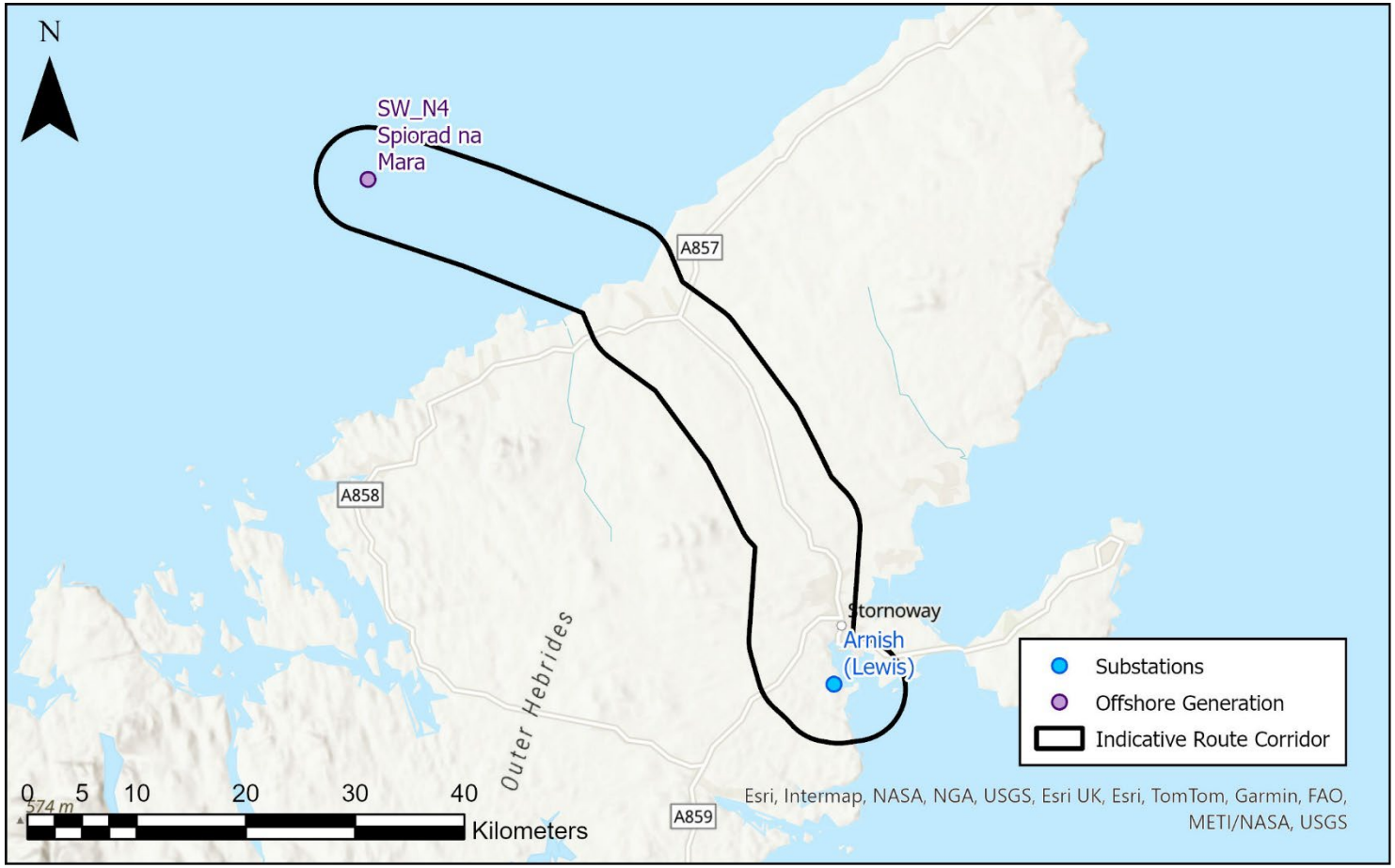
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites (SACs, SPAs, HPMAs, Ramsar, MCZs, SSSIs) within the 5km indicative offshore route corridor or within the route corridor at landfall that cannot be avoided. The North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) can be avoided within the route corridor. There is potential for indirect short-term impacts on designated species from this site during the construction and decommissioning phases or during cable maintenance activities (-2). The River Thurso SAC (designated for fish species including Atlantic salmon) cannot be avoided by the route corridor and would need to be crossed. There is potential for short-term direct and indirect impacts within this site during the construction and decommissioning phases and during cable maintenance activities (-2). It may be possible to avoid direct impacts by drilling beneath the site. The Loch Lieurary SSSI, Newlands of Geise Mire SSSI and River Thurso SSSI are also within the onshore route corridor but can be avoided. There may be potential for indirect effects on these sites in the short-term construction and decommissioning phases and during any cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex 1 reef within the offshore route corridor and within the route corridor at landfall that may not be possible to avoid (-2). There is potential for direct and indirect impacts on these habitats during construction and decommissioning; direct impacts have the potential to be permanent in nature. There are areas of ancient woodland within the onshore route corridor, however these can be avoided (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Halkirk is within the onshore route corridor but can be avoided, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There is the Ushat Head SSSI, Achanarras Quarry SSSI, Banniskirk Quarry SSSI and Spittal Quarry SSSI which can be avoided, avoiding the potential for direct impacts (-1). There are also Annex 1 reefs at landfall that cannot be avoided (-	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good to moderate quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall that will need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as a proposed offshore electrical connector (SHET Orkney) is located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads and a railway line located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There are high-density fishing areas and the urban area of Halkirk within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are two known wreck locations within the offshore route corridor and two at landfall; these areas can be avoided within the route corridor, avoiding the potential for direct negative effects. There are two Scheduled monuments within the route corridor at landfall and 21 within the onshore route corridor, however these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban area of Halkirk is within the onshore route corridor but can be avoided, avoiding the potential for visual effects to many receptors within this higher populated area (-1). In general, there is potential for short-term impacts on local landscapes and views and on the local population during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
The HND SW_N1 to Spittal link will require infrastructure in the vicinity of the new Spittal sub-station. The sub-station site at Spittal is relatively lightly constrained although it is located in an open flat area with limited opportunity for screening.				

SW_N4 - Arnish						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_N4 Spiorad na Mara	Arnish (Lewis)	38	1000	3 AC	3	Y – HND1
Overview of Route						



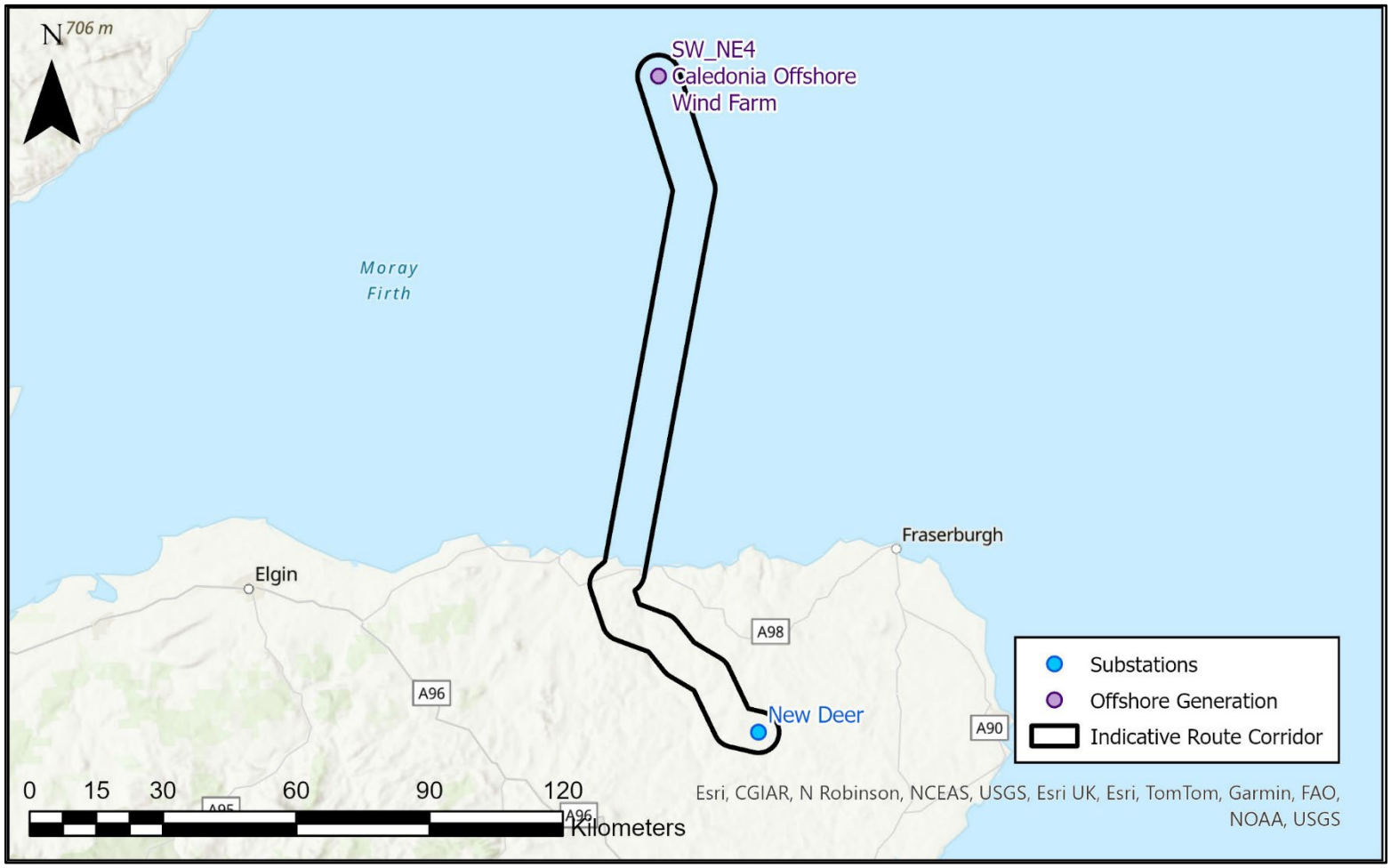
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites (SACs, SPAs, HPMAs, Ramsar, MCZs, SSSIs) within the 5km indicative offshore route corridor or within the route corridor at landfall. The Lewis Peatlands SPA (designated for breeding Black-throated diver, Dunlin, Golden Eagle, Golden plover, Greenshank, Merlin, Red-throated diver) and the Lewis Peatlands Ramsar are within the onshore route corridor; these sites cannot be avoided and would need to be crossed. There is potential for short-term direct and indirect impacts within these sites from disturbance of designated species or loss/damage to supporting habitats within these sites in the construction and decommissioning phases and during any cable maintenance activities (-2). The Lewis Peatlands SAC (designated for blanket bog, heathland and lake habitats as well as otter), the Ness and Barvas SPA (designated for breeding corncrake) and the Tong Saltings SSSI are also within the onshore route corridor but can be avoided. There may be potential for indirect effects on these sites in the short-term construction and decommissioning phases and during any cable maintenance activities, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that may not be possible to avoid. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. The Lewis Peatlands IBA, West Coast Lewis IBA are within the 5km indicative onshore route corridor and cannot be avoided and there is potential for direct short-term impacts within these areas through disturbance of bird species and short-term loss/damage of supporting habitats (-1). The Stornoway to Back IBA is also within the onshore route corridor, while the Loch na Muilne RSPB site is within the route corridor at landfall; these areas can both be avoided; the potential for indirect short-term impacts on bird species and supporting habitats within these areas should be considered at the detailed design stage (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Stornoway is within the onshore route corridor but can be avoided, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs within the 5km indicative route corridor that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily poor quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these can be avoided at landfall but will need to be avoided or crossed within the route corridor; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided at landfall but cannot be avoided within the route corridor, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as a proposed wind farm (North West Lewis) is located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. The Stornoway Port, the Drill Hall Military Area and the urban area of Stornoway are located within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are three Scheduled monuments within the onshore route corridor, however these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban area of Stornoway is within the onshore route corridor but can be avoided, avoiding the potential for visual effects to many receptors within this higher populated area (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
The Arnish to Beauly HVDC link is a project that may be competing for space with the HND SW_N4 link. There is also a proposal for a major housing development at Newmarket on the northern edge of Greater Stornoway which may impact on the onshore cable route around Stornoway.				

SW_NE4 – New Deer						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE4 Caledonia	New Deer	90.2	2000	4 - 5 AC	4 - 5	Y – HND1
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore and landfall route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat. There are known locations of Annex I reef at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity to the cable route, which should be considered at the detailed design stage (-1). There are areas of ancient woodland within the onshore route corridor, which may not be possible to avoid. There is potential for direct or indirect damage or permanent loss of areas of habitat within the direct cable route (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban areas of Banff and Whitehills are within the route corridor at landfall, while the Cuminestown urban area is within the onshore route corridor. However, these urban areas can be avoided, avoiding the potential for significant direct effects (-1). The Inverboyndie bathing waters are located within the route corridor and can be avoided at landfall, however this may not be possible due to other more significant constraints such as settlements. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the bathing waters during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and the Whitehills to Melrose Coast SSSI which can be avoided, avoiding the potential for direct impacts (-1). However, the Southern Trench MPA and the Annex 1 reefs cannot be avoided (-2). There is potential for short-	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these can be avoided at landfall but cannot be avoided in the route corridor and will need to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided at landfall but cannot be avoided within the onshore corridor, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as the Moray Firth Military Area, two offshore cables and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative corridor and cannot be avoided. There is offshore infrastructure (two oil/gas wells/diffusers), one existing energy generation cable for the Moray offshore wind farm, a designated anchorage area north of Macduff, two marinas (Banff Harbour Marina and Whitehills Marina) and three urban areas (Banff, Cuminestown and Whitehills) within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, listed buildings, registered battlefields, historic MPAs, Conservation Areas or listed buildings within the 5km indicative route corridor. There are ten known wreck locations within the offshore route corridor and one within the route corridor at landfall. There are also three Scheduled monuments within the route corridor at landfall and eight within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. The Duff House Parks and Garden is within the route corridor at landfall and the onshore route corridor, while Hatton Castle is also within the onshore route corridor. These sites can be avoided by cable routes within the corridor, avoiding the potential for direct impacts on these sites. There may be potential for short-term impacts on the setting of these heritage assets during the construction and decommissioning phases, depending on proximity to cable routes.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust, or National Trails within the 5km indicative route corridor. The urban areas of Banff and Whitehills are within the route corridor at landfall, while the Cuminestown urban area is within the onshore route corridor. However, these urban areas can be avoided, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The HND SW_NE4 to New Deer link has a common route to the proposed route HNDFUE SW_NE4 route to New Deer so will need to be considered at the detailed design stage.				

WCD4-Pen Delta – Ballantrae to Pentir						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Ballantrae	Pentir	314	4000	2 x HVDC pairs	2	Y – HND1
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The North Anglesey Marine SAC (designated for harbour porpoise) and the Clyde Sea Sill MPA (designated for sand and coarse sediment communities, fronts and black guillemot) are within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats, and disturbance and displacement of species (-2). The Afon Gwyrfai a Llyn Cwellyn SAC and SSSI are within the onshore route corridor at Pentir and cannot be avoided; both sites are designated for freshwater habitats and species and there is potential for short-term direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities (-2). There are numerous designated sites within the offshore route corridor that are avoidable, avoiding the potential for direct impacts. These are the Mull of Galloway SAC (designated for vegetated sea cliffs), North Channel SAC (designated for harbour porpoise), Y Twyni o Abermenai i Aberffraw / Abermenai to Aberffraw Dunes SAC (designated for dune habitats), South Rigg MCZ, and Mull of Galloway SSSI. There may be potential for short-term indirect impacts on protected features within these sites, which should be considered at the detailed design stage (-1). There are also several designated sites within the route corridor at landfall and onshore at Ballantrae or Pentir that are avoidable, avoiding the potential for direct impacts. These are Abermenai to Aberffraw Dunes SAC (designated for dune habitats), Glynllifon SAC (designated for lesser horseshoe bat), Morfa Dinlle SSSI (designated for dune and shingle habitats), Bennane Head Grasslands SSSI, Afon Gwyrfai A Llyn Cwellyn SSSI (designated for freshwater habitats and species), and Pant Cae Haidd SSSI (designated for grassland and woodland habitats). There may be potential for short-term indirect impacts on protected features within these sites, which should be considered at the detailed design stage (-1). The Galloway and Southern Ayrshire Biosphere Reserve is within the offshore route corridor and landfall and onshore at Ballantrae and cannot be avoided, and there is potential for short-term direct and indirect impacts on flora and fauna within this area in the construction and decommissioning phases and during cable maintenance activities (-1). The Trefor IBA is located offshore and at landfall and onshore at Pentir, while the Morfa Dinlle RSPB Reserve is also at landfall and onshore at Pentir; these areas are avoidable within the route corridor (-1). There are known locations of Annex I reef within the offshore route corridor, landfall at Pentir and landfall at Ballantrae; these areas cannot be avoided at Ballantrae. There is potential for direct and indirect impacts during construction and decommissioning and cable maintenance activities; direct impacts have the potential to be long-term or permanent (-2). There are known areas of NRW Key Sensitive Habitats within the offshore route corridor (including horse mussel beds and peat and clay exposures) and at landfall at Pentir (peat & clay	-2	-2	-2	Direct & Indirect

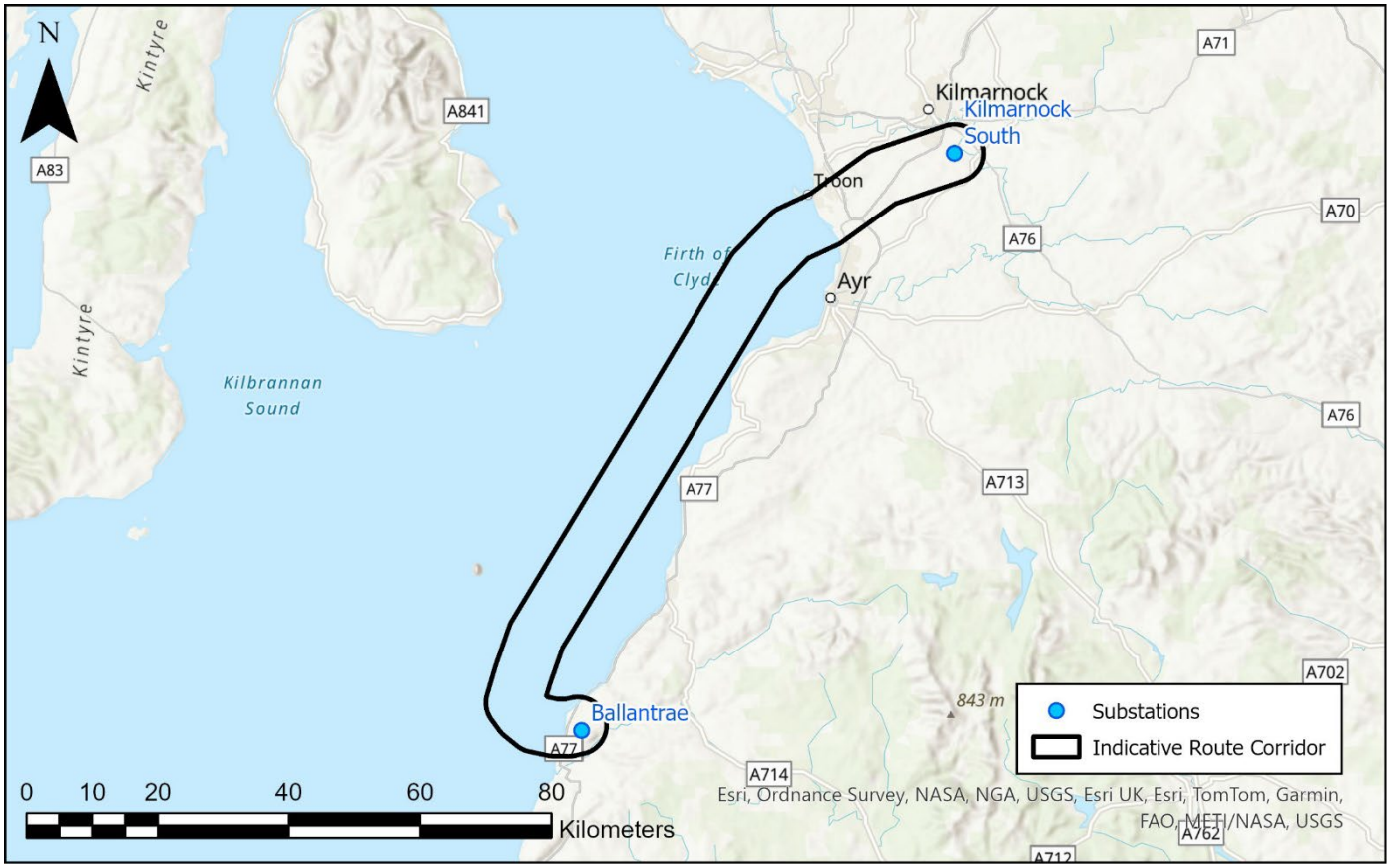
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
exposures); these areas are avoidable, but there may be potential for indirect impacts that should be considered at the detailed design stage (-2). There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route (-1). There are known locations of harbour seals and grey seals offshore, which there is limited potential to avoid. There may be potential for short-term disturbance and displacement of these species during the construction and decommissioning phases and during cable maintenance activities (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) There are several urban areas within the onshore route corridor at Pentir, including Groeslon, Bontnewydd, Waunfawr, Caernarfon, Llanrug and Bethel. However, these areas can all be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is also an avoidable bathing water site, and an unavoidable RYA boating area within the offshore and landfall route corridors. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the bathing area (indirect) and boating area (direct), during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Girvan to Ballantrae Coast SSSI onshore and at landfall at Ballantrae can be avoided as well as the Dinas Dinlle SSSI and Annex 1 reefs at the Pentir landfall, avoiding the potential for direct impacts (-1). The onshore Dinas Dinlle SSSI at Pentir can also be avoided. Offshore, the dredge and spoil dumping sites, Mull of Galloway SSSI, South Rigg MCZ and the Girvan to Ballantrae Coast SSSI can be avoided, avoiding the potential for direct impacts (-1). However, the Annex 1 reefs at the Ballantrae landfall cannot be avoided (-2) and there are also Annex 1 reefs offshore and the Clyde Sea Sill MPA that cannot be avoided (-2) so there is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality and the small area that is very good quality land along the coast	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
can be avoided (-1). There is also potential for short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore at Ballantrae and Pentir, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall at Ballantrae and Pentir, these will need to be avoided or crossed within the route corridor, therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore, however, there is potential to avoid these within the route corridor, avoiding the potential for direct impacts. There are areas benefiting from flood defences within the onshore route and at landfall at Pentir, however there is potential to avoid these, avoiding the potential for direct impacts.	-1	0	0	Direct & Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (314 km route length) during the construction and decommissioning phases and during any cable maintenance activities.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 44 offshore cables, eight offshore pipelines, two pipelines associated with energy generation sites, high-density shipping areas, the Campbelltown Military Area, a Traffic Separation Scheme off Skerries and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, roads located within both the Ballantrae and Pentir onshore portions of the 5km indicative corridor cannot be avoided. Additionally, a railway line cannot be avoided within the Pentir onshore portion of the 5km indicative route corridor. There is offshore infrastructure (one oil/gas well), five dredge and spoil dumping sites, the Juniper Rock Military Area, three onshore military areas, a railway line, onshore infrastructure (National Grid towers, overhead lines and cables), and six urban areas (Groeslon, Bontnewydd, Waunfawr, Caernarfon, Llanrug and Bethel) within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 47 known wreck locations within the offshore route corridor and one within the landfall route corridor at Pentir; however, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There are three Scheduled monuments within the offshore route corridor, three within the onshore route corridor at Ballantrae, one within the landfall route corridor and 28 within the onshore route corridor at Pentir, and there are also four listed buildings within the landfall route corridor at Pentir and 237 onshore. However, these can also be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) The Ayrshire Coastal Path National Trail is within the route corridor at landfall and onshore at Ballantrae and cannot be avoided. There is potential for short-term visual effects within this area during the construction and decommissioning phases and during cable maintenance activities (-2). There are several urban areas within the onshore route corridor at Pentir, including Groeslon, Bontnewydd, Waunfawr, Caernarfon, Llanrug and Bethel. However, these areas can all be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The HND Ballantrae to Pentir link shares a similar landfall and onshore route to the HND SW_W1 to Ballantrae and Kilmarnock South to Ballantrae routes.				

Ballantrae Tee - Kilmarnock South						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Ballantrae Tee	Kilmarnock South	~105	2000	2 HVDC	1	Y - HND1
Overview of Route						



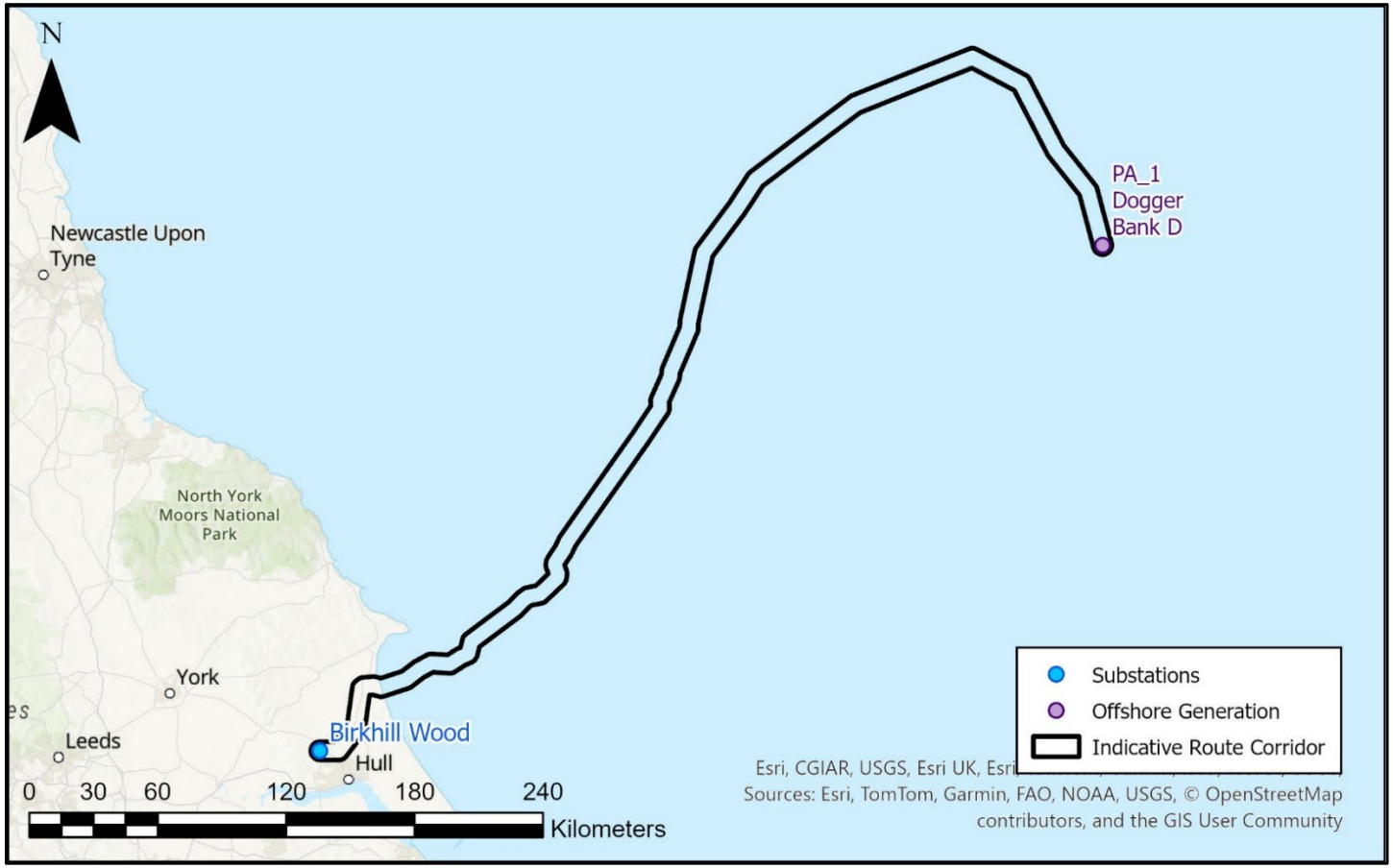
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Bennane Head Grasslands SSSI is within the landfall and onshore route corridor at Ballantrae but can be avoided. The Troon Golf Links and Foreshore SSSI is within the offshore, landfall and onshore route corridor at Kilmarnock South but can also be avoided. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). The Galloway and Southern Ayrshire Biosphere Reserve is also within the landfall and onshore route corridor at Ballantrae and cannot be avoided, so there is potential for short-term direct and indirect impacts on the flora and fauna within this site (-1). There are known locations of Annex I reef within the offshore route corridor at Kilmarnock South and within the route corridor at landfall at Ballantrae; these areas cannot be completely avoided. There is potential for direct and indirect impacts during construction and decommissioning and cable maintenance activities; direct impacts have the potential to be long-term or permanent (-2). There is also a known area of Annex I saltmarsh within the route corridor at landfall at Kilmarnock south. There is potential to avoid this area, avoiding the potential for direct impacts; however, there is potential for indirect impacts on this habitat, which should be considered at the detailed design stage (-1). There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Troon is located within the landfall route corridor at Kilmarnock South while Prestwick, Symington and Caprington are located along the onshore route corridor, however, these can all be avoided by the cable route, avoiding the potential for significant direct effects (-1). There are two bathing water sites (Prestwick and Troon) within the offshore and landfall route corridors, however these can be avoided by the cable route. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the bathing water sites during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites offshore and the Girvan to Ballantrae Coast Section SSSI at landfall which can be avoided, avoiding the potential for direct impacts (-1). There are also Annex 1 reefs that cannot be avoided onshore and at the Ballantrae landfall (-2) so there is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality and the small area that is very good quality land along the coast can be avoided (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes and rivers within the 5km indicative onshore route corridor at Kilmarnock South and Ballantrae, with limited scope to completely avoid these, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall at Ballantrae and Kilmarnock South, these cannot be avoided; therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore; however, there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the landfall route corridor at Kilmarnock South, however these can be avoided (-1). There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there is Scottish Power infrastructure (towers, transmission cables and overhead lines), roads and a railway line located within the Kilmarnock South onshore portion of the 5km indicative corridor, which cannot be avoided. Numerous roads cannot be avoided within the Ballantrae onshore portions of the 5km indicative route corridor. There is a dredge and spoil dumping site, Troon Port, railway lines and four urban areas (Troon, Prestwick, Symington and Caprington), within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 6 known wreck locations within the offshore route corridors which can be avoided by the cable route, avoiding the potential for direct negative impacts. There are ten Scheduled monuments and one listed building within the onshore route corridor at Kilmarnock South and three Scheduled monuments within the onshore route corridor at Ballantrae, However, these can also be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. There is also a Garden and Designed Landscape within the onshore route corridor at Kilmarnock South. This site can be avoided by cable routes within the corridor, avoiding the potential for direct impacts on these sites. There may be potential for short-term impacts on the setting of these heritage assets during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) The Ayrshire Coastal Path National Trail is within the route corridor at landfall and onshore at Kilmarnock South, and also at landfall and onshore at Ballantrae and cannot be avoided. There is potential for short-term visual effects within this area during the construction and decommissioning phases and during cable maintenance activities (-2). The area of Troon is located within the landfall route corridor at Kilmarnock South. However, this area can be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect
Cumulative and in combination issues				
The HND Kilmarnock South to Ballantrae link shares a similar landfall and onshore route to the HND SW_W1 to Ballantrae and Ballantrae to Pentir links.				

HND1 – PA_1 to Birkhill Wood Alternative						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PA_1 Dogger Bank D	Birkhill Wood	307.5	1440	2 DC	1	Y – HND1 (alternative)
Overview of Route						



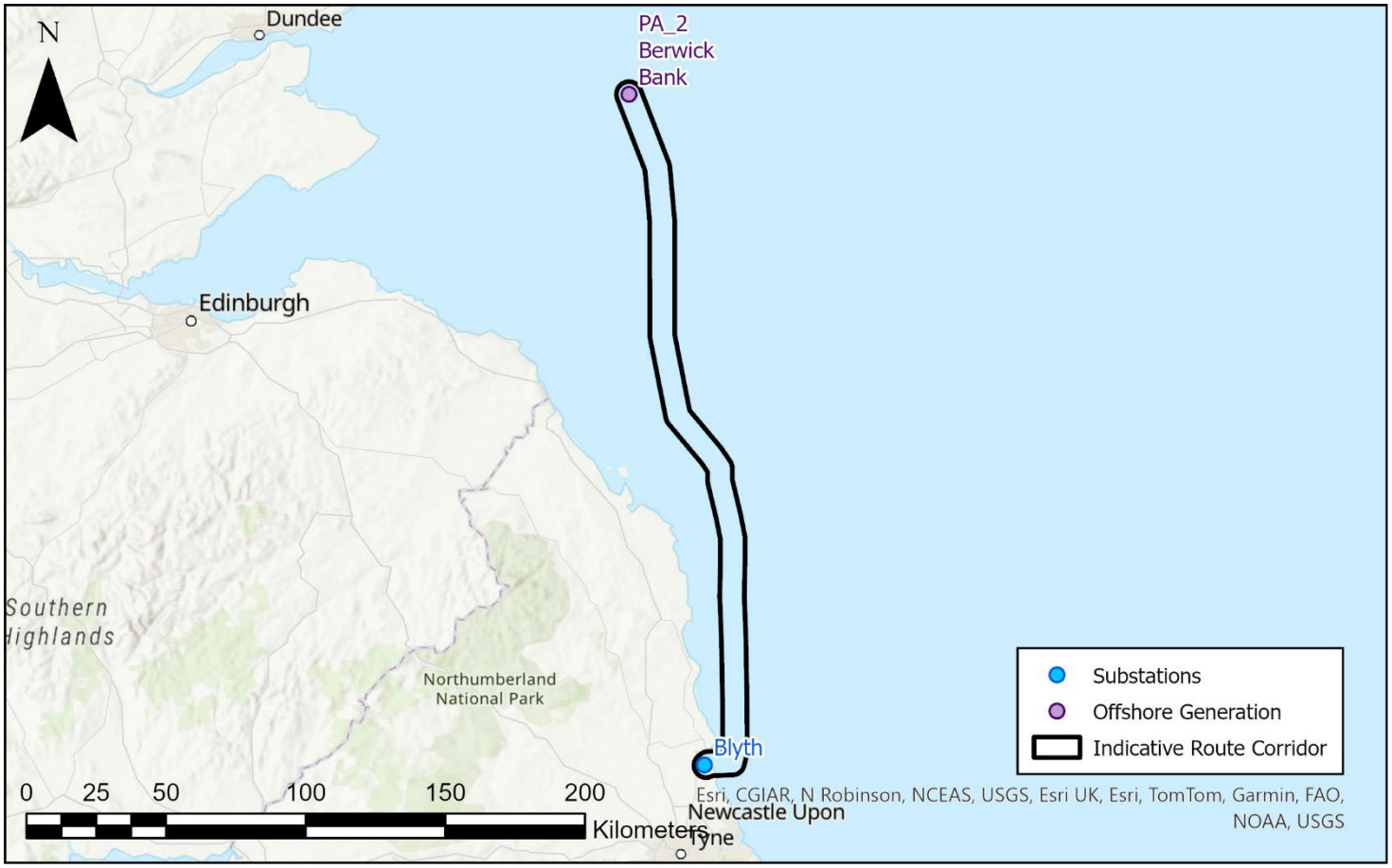
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided as the generation site is located within the SAC. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Holderness Inshore MCZ (designated for muds, sands, rock and coarse and mixed sediments) is within the offshore and landfall route corridor and can possibly be avoided; however, the space for avoidance is limited, and there may be potential for direct and indirect impacts on habitats within the site (-2). The Holderness Offshore MCZ (designated subtidal coarse and mixed sediment, subtidal sand, North Sea glacial tunnel valleys and Ocean quahog) is within the offshore route corridor, and the Leven Canal SSSI is within the onshore route corridor; however, these sites are avoidable by the cable route; there is potential for short-term indirect impacts on protected features, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef and sandbank within the offshore route corridor and within the route corridor at landfall; Annex I sandbank cannot be completely avoided. There is potential for direct impacts on offshore sandbank (-2) and indirect impacts on reef (-1) during construction and decommissioning and cable maintenance activities. There is an area of ancient woodland within the onshore route corridor, however this can be avoided by the cable route (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) There are urban areas throughout the onshore route corridor, including Beeford, Brandesburton, Leven, Beverly, Woodmansey and Cottingham; however, these areas can all be avoided by the cable route, avoiding the potential for significant direct effects (-1). The Skipsea bathing waters are located within the offshore and landfall route corridors but can be avoided, there is also an RYA sailing and racing area in the offshore and landfall corridors which cannot be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impact to the bathing areas (indirect) and boating area (direct) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Withow Gap, Skipsea SSSI and Annex 1 reefs can be avoided, avoiding the potential for direct impacts (-1). However, the Holderness Inshore MCZ and Annex I Sandbanks at landfall cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily very good and good quality that cannot be avoided (-2). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided and would need to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and areas benefiting from defences at landfall, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (307.5 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as six offshore cables, two offshore pipelines, a pipeline associated with the Endurance CO_2 Storage Facility, the Staxton Military Area and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, a railway line, numerous roads and onshore infrastructure (National Grid overhead lines and two onshore gas pipelines) are located within the onshore portion of the 5km indicative corridor and cannot be avoided. There is offshore infrastructure (oil/gas wells), onshore infrastructure (National Grid transmission towers and substations), one onshore military area (Skipsea ROC Post) and eleven urban areas (Beeford, Brandesburton, North Frodingham, Leven, Long Riston, Beverly, Woodmansey, Dunswell, Kingswood, Walkington and Cottingham) within the 5km indicative	-2	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
route corridor, which can be avoided, avoiding potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).				
Cultural, Architectural and Archaeological Heritage (CH) There are 33 known wreck locations within the offshore route corridor, and one within the route corridor at landfall; however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is 1 Scheduled monument and one listed building within the route corridor at landfall, and 12 Scheduled monuments and 70 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified areas of landscape sensitivity within the route corridor. There are urban areas throughout the onshore route corridor, including Beeford, Brandesburton, Leven, Beverly, Woodmansey and Cottingham; however, these areas can all be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There is significant potential for in combination effects between the route from PA_1 to Birkhill Wood and other connections to Birkhill Wood including those from Dogger Bank South West and East as they all share common routing on the approach to shore. Offshore the PA_1 to Birkhill Wood link interacts with the HND SW_E1a to Lincolnshire Connection Node link.				

East England Region: EE10 - PA_2 – Blyth						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PA_2 Berwick Bank	Blyth	145	1850	5 AC	5	Y – HND1
Overview of Route						



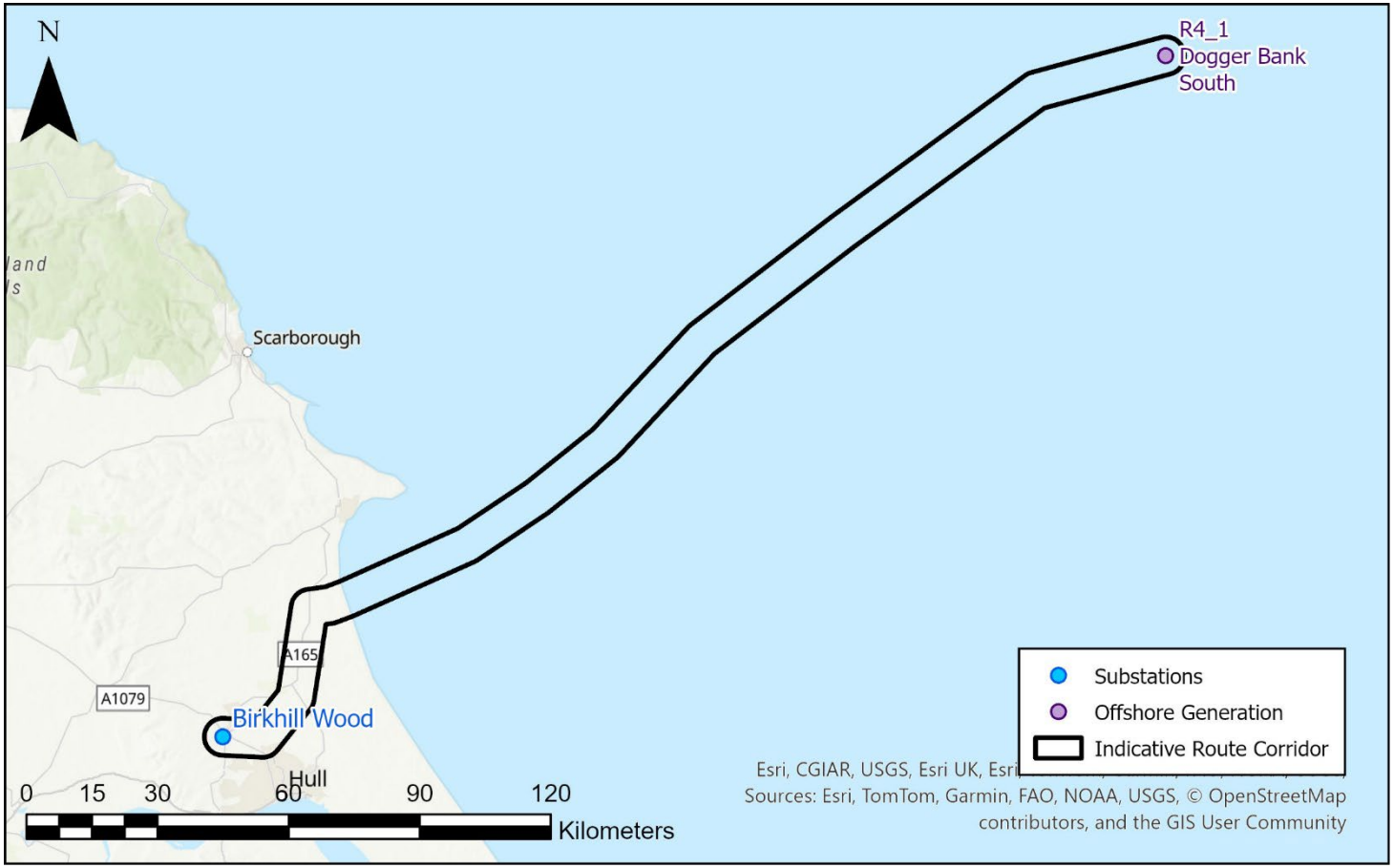
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Berwickshire and North Northumberland Coast SAC (designated for large shallow inlets and bays, mudflats and sandflats, reefs sea caves), Berwick to St Mary's MCZ (designated for common eider), Coquet to St Marys MCZ (designated for rock and sediment communities on the shoreline and on the seabed), Northumberland Marine SPA (designated for breeding tern species and migratory species such as puffin and guillemot), and Northumberland Shore SSSI (designated for purple sandpiper, turnstone, sanderling, golden plover, ringed plover, and redshank) are within the offshore route corridor and cannot be avoided. The Berwick to St Mary's MCZ and Coquet to St Marys MCZ are also unavoidable at landfall, and the Northumberland Marine SPA and Northumberland Shore SSSI are also unavoidable at landfall and onshore. There is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of bird species or damage to habitats (-2/-3). The Northumbria Coast SPA (designated for breeding little tern and arctic terna and migratory turnstone and sandpiper), Northumbria Coast Ramsar site, Farnes East MCZ (designated for subtidal sediments, circalittoral rock, sea-pen communities and ocean quahog) are within the offshore route corridor but can be avoided by the cable route, avoiding the potential for direct impacts. The Northumbria Coast SPA and Ramsar are also avoidable at landfall, and the Northumbria Coast IBA is avoidable offshore and at landfall. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, which there is limited scope to avoid. There is potential for direct impacts and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities, which may be long-term to permanent in nature (-2). There is a known area of high density for grey seals within the offshore route corridor that cannot be avoided, and there may be potential for short-term disturbance and displacement (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct & Indirect
Population and Human Health (PHH)	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The urban area of Blyth is within the route corridor at landfall and onshore and the urban area of Bedlington is also within the onshore route corridor, but can be avoided, avoiding the potential for significant direct effects (-1). There is also an RYA boating area within the offshore and landfall route corridor which can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the boating area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites and the Cresswell and Newbiggin Shores SSSI which can be avoided, avoiding the potential for direct impacts (-1). The Berwick to St Mary's MCZ runs the length of the coast past Blyth and cannot be avoided within the route corridor (-3). The Northumberland Shore SSSI and Annex 1 reefs also cannot be avoided within the route corridor (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The area is primarily urban with an area of good quality agricultural land (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-3	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these would need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as six offshore cables and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, a railway line and numerous roads are located within the onshore portion of the 5km indicative corridor and cannot be avoided. There is offshore infrastructure (one diffuser), two spoil dumping sites, three existing wind farms (Blyth wind farm phases 1, 2 and 3), an area of navigational dredging, the Noah Met Mast, high-density shipping areas, the Port of Blyth, onshore infrastructure (National Grid transmission towers, substations, cables and overhead lines) and two urban areas (Blyth and Bedlington) within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 54 known wreck locations within the offshore route corridor. There is one listed building within the route corridor at landfall and 24 within the onshore route corridor. However, all these assets can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). In general, there is also potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban area of Blyth is within the route corridor at landfall and onshore and the urban area of Bedlington is also within the onshore route corridor, but can be avoided, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There are multiple proposed offshore cables that overlap the PA_2 to Blyth connection so this will need to be considered at the detailed design stage.				

R4_1 - Birkhill Wood						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_1 Dogger Bank South West	Birkhill Wood	163	1800	2 DC	1	Y – HND1
Overview of Route						



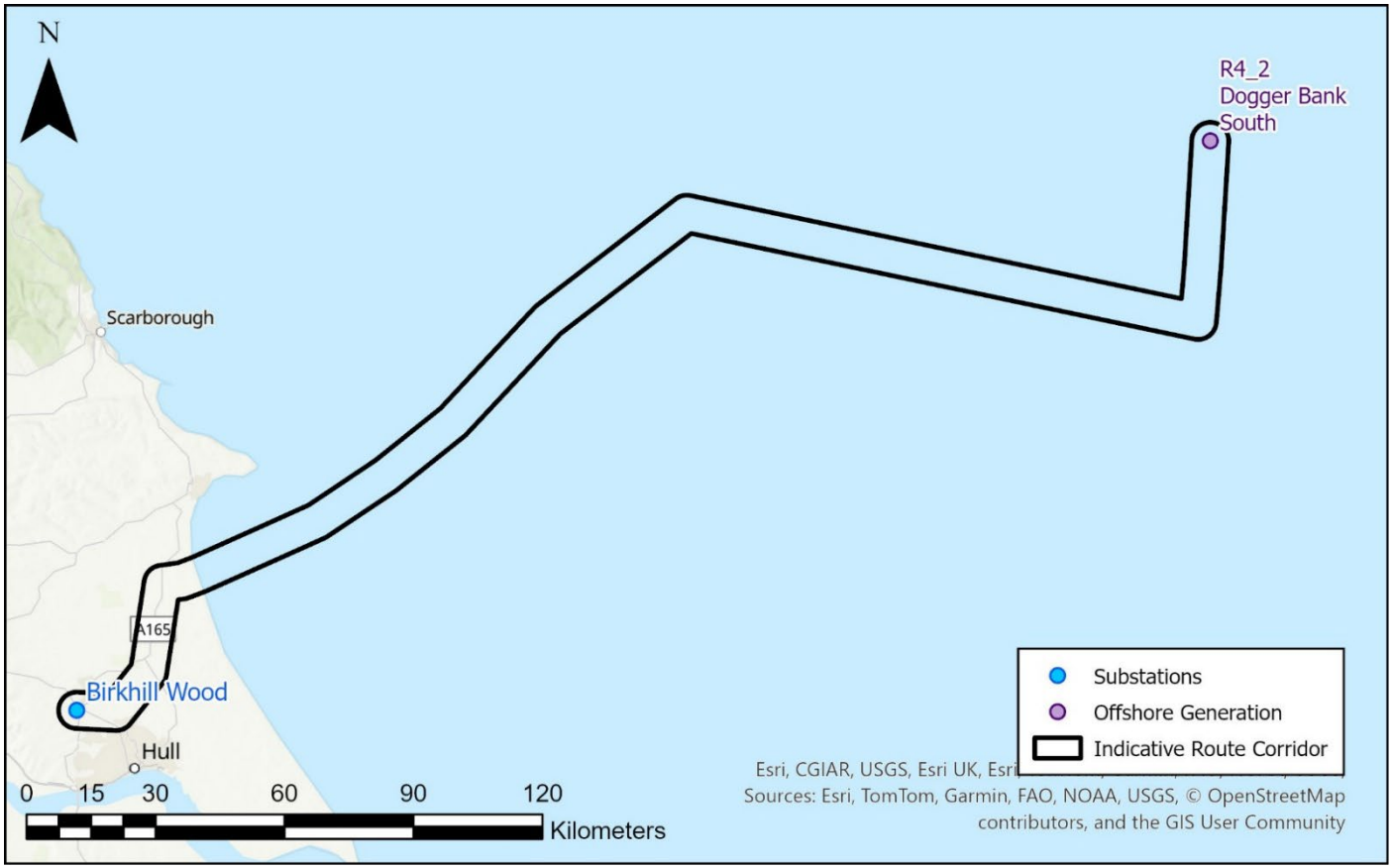
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided as the generation site is located within the SAC. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Holderness Offshore MCZ (designated subtidal coarse and mixed sediment, subtidal sand, North Sea glacial tunnel valleys and Ocean quahog) is within the offshore route corridor, the Holderness Inshore MCZ (designated for muds, sands, rock and coarse and mixed sediments) is within the offshore and landfall route corridor, and the Leven Canal SSSI is within the onshore route corridor; however, all of these sites are avoidable by the cable route; there is potential for short-term indirect impacts on protected features, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef and sandbank within the offshore route corridor and within the route corridor at landfall; Annex I sandbank cannot be completely avoided. There is potential for direct impacts on offshore sandbank (-2) and indirect impacts on reef (-1) during construction and decommissioning and cable maintenance activities. There is an area of ancient woodland within the onshore route corridor, however this can be avoided by the cable route (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) There are urban areas throughout the onshore route corridor, including Beeford, Brandesburton, Leven, Beverly, Woodmansey and Cottingham; however, these areas can all be avoided by the cable route, avoiding the potential for significant direct effects (-1). The Skipsea bathing waters are located within the offshore and landfall route corridors but can be avoided, there is also a RYA sailing and racing area in the offshore and landfall corridors which cannot be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impact to the bathing areas (indirect) and boating area (direct) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs, the Withow Gap, Skipsea SSSI and the Holderness Inshore MCZ offshore which can be avoided, avoiding the potential for direct impacts (-1). However, there are also Annex 1 sandbanks offshore and at landfall that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily very good and good quality that cannot be avoided (-2). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these need to be avoided or would need to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
decommissioning phases, as well as during any cable maintenance activities (-1). There are areas benefiting from defences at landfall, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 3 offshore pipelines and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads, a railway line and onshore infrastructure (two National Grid gas pipelines) are located within the onshore portion of the 5km indicative corridor and cannot be avoided. There is offshore infrastructure (four oil/gas wells), onshore infrastructure (transmission towers and an overhead line), one onshore military area and seven urban areas (Beeford, Brandesburton, Leven, Beverly, Woodmansey, Kingswood and Cottingham) within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 35 known wreck locations within the offshore route corridor, and one within the route corridor at landfall however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument and one listed building within the route corridor at landfall, and 12 Scheduled monuments and 70 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified areas of landscape sensitivity within the route corridor. There are urban areas throughout the onshore route corridor, including Beeford, Brandesburton, Leven, Beverly, Woodmansey and Cottingham; however, these areas can all be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There is significant potential for in combination effects between the route from R4_1 to Birkhill Wood and other connections to Birkhill Wood including those from Dogger Bank D and Dogger Bank South East as they all share common routing on the approach to shore. Offshore the R4_1 to Birkhill Wood link interacts with the HND SW_E1a to Lincolnshire Connection Node link.				

South East Cluster: R4_2_1 - Birkhill Wood						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_2_1 Dogger Bank South East	Birkhill Wood	208	1800	2 DC	1	Y – HND1
Overview of Route						



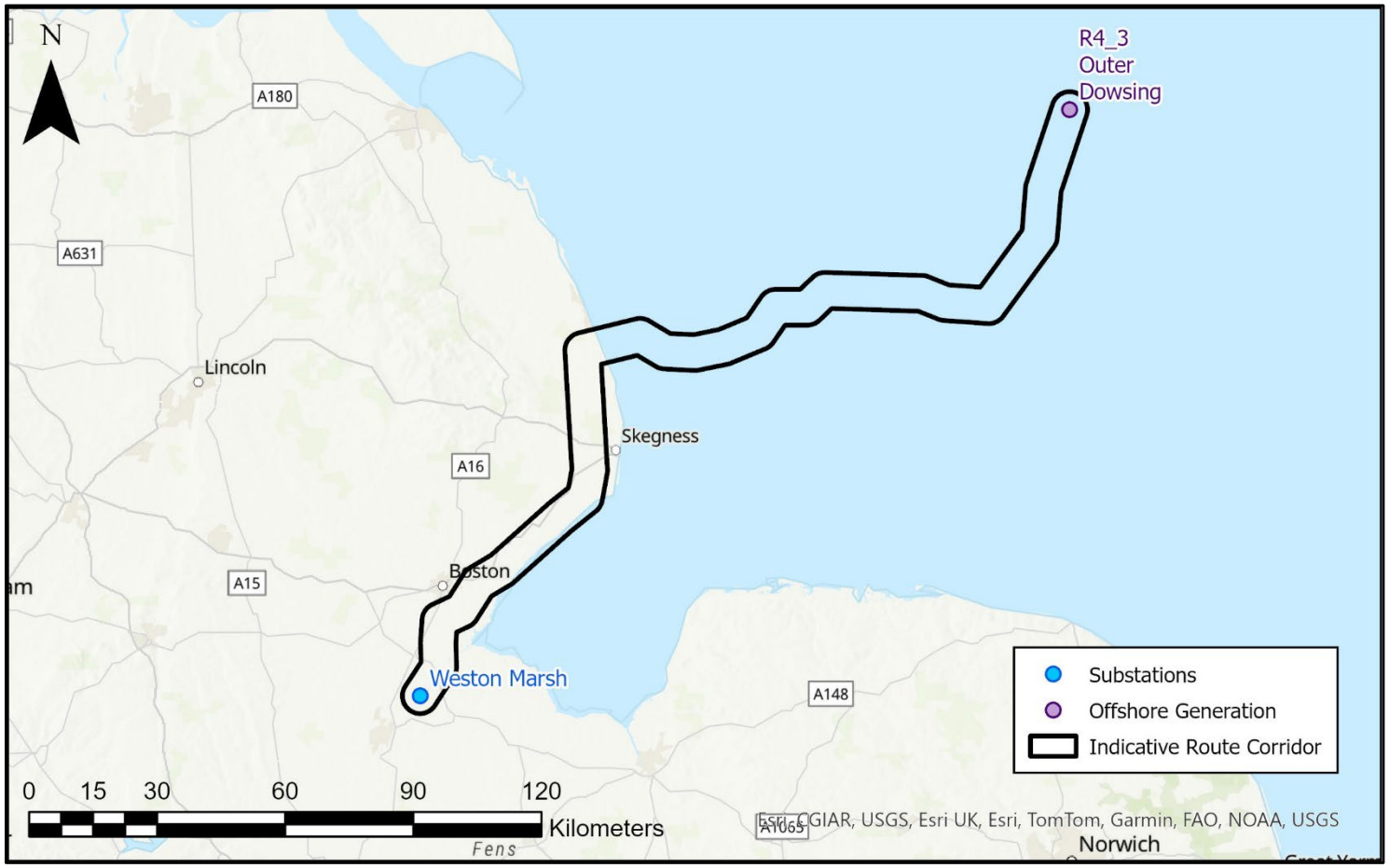
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided as the generation site is located within the SAC. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Holderness Offshore MCZ (designated subtidal coarse and mixed sediment, subtidal sand, North Sea glacial tunnel valleys and Ocean quahog) is within the offshore route corridor, the Holderness Inshore MCZ (designated for muds, sands, rock and coarse and mixed sediments) is within the offshore and landfall route corridor, and the Leven Canal SSSI is within the onshore route corridor; however, all of these sites are avoidable by the cable route; there is potential for short-term indirect impacts on protected features, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef and sandbank within the offshore route corridor and within the route corridor at landfall; Annex I sandbank cannot be completely avoided. There is potential for direct impacts on offshore sandbank (-2) and indirect impacts on reef (-1) during construction and decommissioning and cable maintenance activities. There is an area of ancient woodland within the onshore route corridor, however this can be avoided by the cable route (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) There are urban areas throughout the onshore route corridor, including Beeford, Brandesburton, Leven, Beverly, Woodmansey and Cottingham; however, these areas can all be avoided by the cable route, avoiding the potential for significant direct effects (-1). The Skipsea bathing waters are located within the offshore and landfall route corridors but can be avoided, there is also an RYA sailing and racing area in the offshore and landfall corridors which cannot be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impact to the bathing areas (indirect) and boating area (direct) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Annex 1 reefs, the Withow Gap, Skipsea SSSI and the Holderness Inshore MCZ can be avoided, avoiding the potential for direct impacts (-1). However, there are offshore Annex 1 sandbanks that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily very good and good quality that cannot be avoided (-2). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these need to be avoided or would need to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
decommissioning phases, as well as during any cable maintenance activities (-1). There are areas benefiting from defences at landfall, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (208.9 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 9 offshore pipelines and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads, a railway line and onshore infrastructure (two National Grid gas pipelines) are located within the onshore portion of the 5km indicative corridor and cannot be avoided. There is offshore infrastructure (22 oil/gas wells), onshore infrastructure (transmission towers and an overhead line), 1 onshore military area and 7 urban areas (Beeford, Brandesburton, Leven, Beverly, Woodmansey, Kingswood and Cottingham) within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 46 known wreck locations within the offshore route corridor, and one within the route corridor at landfall; however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument and one listed building within the route corridor at landfall, and 12 Scheduled monuments and 70 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified areas of landscape sensitivity within the route corridor. There are urban areas throughout the onshore route corridor, including Beeford, Brandesburton, Leven, Beverly, Woodmansey and Cottingham; however, these areas can all be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There is significant potential for in combination effects between the route from R4_2 to Birkhill Wood and other connections to Birkhill Wood including those from Dogger Bank D and Dogger Bank South West as they all share common routing on the approach to shore. Offshore the R4_1 to Birkhill Wood link interacts with the HND SW_E1a to Lincolnshire Connection Node link.				

East England Region – EE15a - R4_3 – Weston Marsh						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_3 Outer Dowsing	Weston Marsh	150	1500	4 AC	4	Y – HND1
Overview of Route						



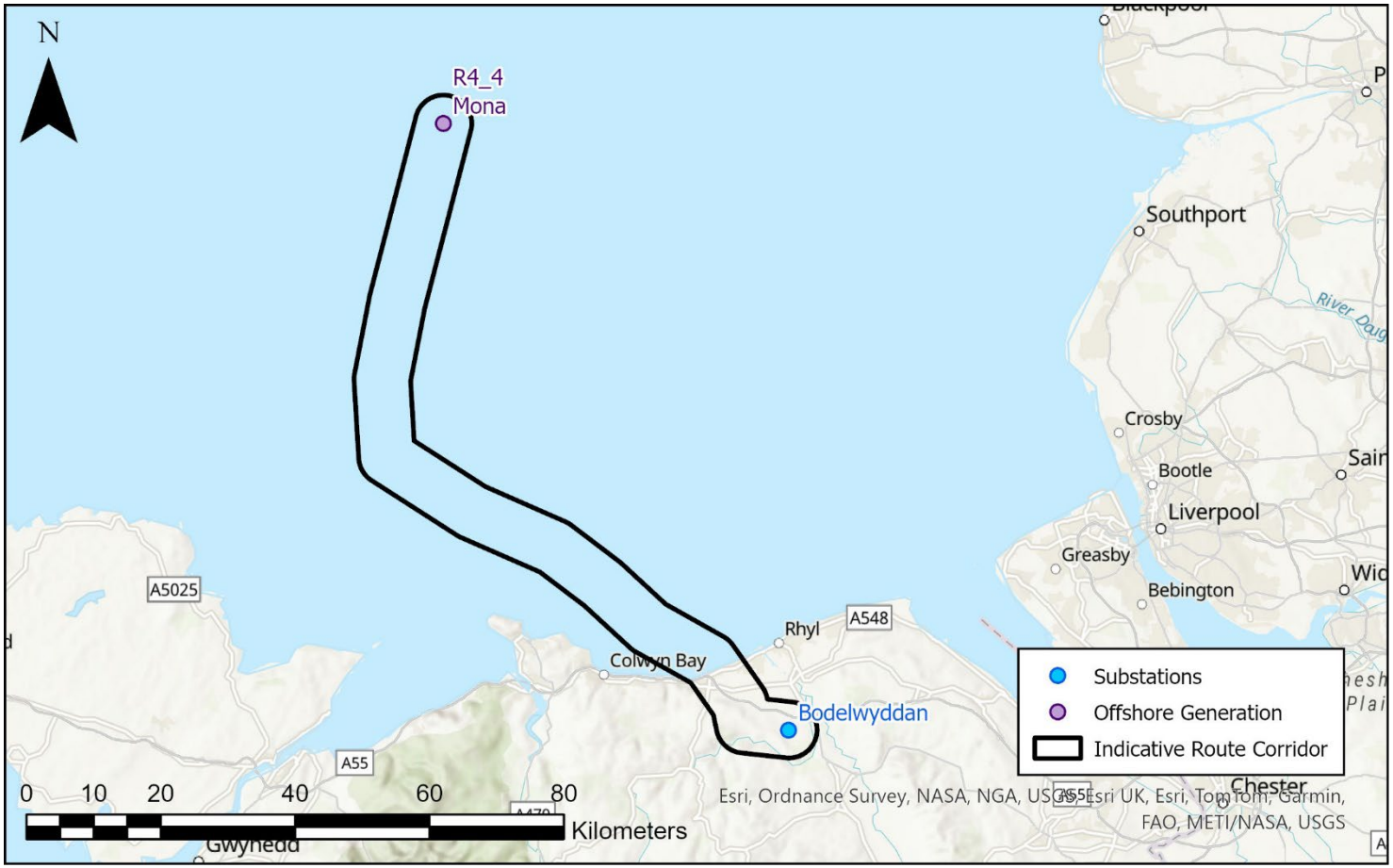
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Inner Dowsing, Race Bank and North Ridge SAC (designated for sandbank) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats sensitive to cabling activities (-3). The Wash and North Norfolk Coast SAC (designated for saltmarsh, coastal lagoons, large shallow inlets and bays, mudflats and sandflats and sandbanks, as well as harbour seals and otters) is within the onshore route corridor and can be avoided, avoiding the potential for direct impacts. There is still potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats sensitive to cabling activities and disturbance and displacement of species (-1). The Greater Wash SPA (designated for non-breeding Red-throated Diver, Common Scoter, and Little Gull, and breeding Sandwich tern, Common tern and Little tern) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats and disturbance and displacement of species (-2). The Wash SPA (designated for red-throated diver, common scoter, and little gull during the non-breeding season, and for breeding sandwich tern, common tern and little tern), Ramsar site (designated for intertidal bay, important mudflats, sandbank, and saltmarsh), SSSI, NNR and IBA as well as the Sea Bank Clay Pits SSSI are onshore but can be avoided, avoiding the potential for direct impacts. The Frampton Marsh RSPB site and Gibraltar Point IBA is also within the onshore route corridor, but both sites can be avoided. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage There are known locations of Annex I sandbank within the offshore route corridor. These cannot be avoided by the cable route. (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	0	0	Direct & Indirect
Population and Human Health (PHH) The Major settlements of Sandilands and urban areas of Skegness and Boston are within the route corridor at landfall but there is potential to avoid this area, avoiding the potential for direct impacts. There is potential for short-term direct noise and disturbance effects to many receptors (-1). There is an unavoidable RYA sailing and	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
racing area. The Moggs Eye and Anderby bathing waters area can be avoided within the offshore and landfall route corridors, avoiding the potential for direct impacts (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the sailing area (direct) and the bathing area (indirect) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are offshore dredge and spoil dumping sites, the Wash SSSI onshore and the Sea Bank Clay Pits SSSI at landfall, which can be avoided, avoiding the potential for direct impacts (-1). However, there are also offshore Annex 1 sandbanks that cannot be avoided (-2) so there is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils. There are areas identified as excellent quality agricultural land within the onshore route corridor that are likely to be unavoidable (-2). The agricultural lands are primarily excellent quality with additional very good and good quality land along the coast (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and offshore dredge and spoil dumping sites, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers at landfall and within the onshore route corridor, these cannot be avoided and would need to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones at landfall and within the onshore route corridor; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as seven offshore cables, nine offshore pipelines, wind farm cables for the Triton Knoll Wind Farm Cable and high-density shipping areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, onshore infrastructure (National Grid infrastructure and a gas pipeline) are located within the onshore portion of the 5km indicative corridor and cannot be avoided (-2). There are also roads and railways onshore that can be avoided (-1). At landfall, the Viking Interconnector, major settlements of Sandilands and a military site are within the route corridor but can be avoided (-1). There is offshore infrastructure (12 oil/gas wells and two oil/gas installations, high-density fishing areas, the Skegness and Boston urban areas, numerous roads, offshore energy generation sites, an area of aggregate dredging, Boston Port and 14 onshore military areas within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure (+1). In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 33 known wreck locations within the offshore route corridor, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There are ten Scheduled monuments and 166 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The major settlements of Sandilands and the urban area of Skegness and Boston are situated throughout the route corridor, however, there is potential to avoid these areas, avoiding the potential for direct impacts. There is potential for short-term visual effects to many receptors within this higher populated area during the construction and decommissioning phases and during cable maintenance activities (-1). In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There is potential for in combination impacts between the route R4_3 to Weston Marsh and SW_E1a to Lincolnshire Connection Node as the links share a similar landfall. A key constraint in terms of cumulative impacts is associated with the Ossian HNDFUE connection, which also connects to Weston Marsh. There is also potential for cumulative impact with other HND connections going to LCN and potentially proposed east coast bootstraps linking from Scotland to this area of the English coast as due to the distribution of environmental designations sensitive to cabling and other offshore infrastructure there is only a relatively narrow corridor for connections to approach the Lincolnshire coast. As the Greater Wash SPA extends past the landfall, there may also be potential for cumulative impacts upon designated bird species.				

NWIn1a - R4_4 - Bodelwyddan						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_4 Mona	Bodelwyddan	66	1500	4 AC	4	Y - HND1
Overview of Route						



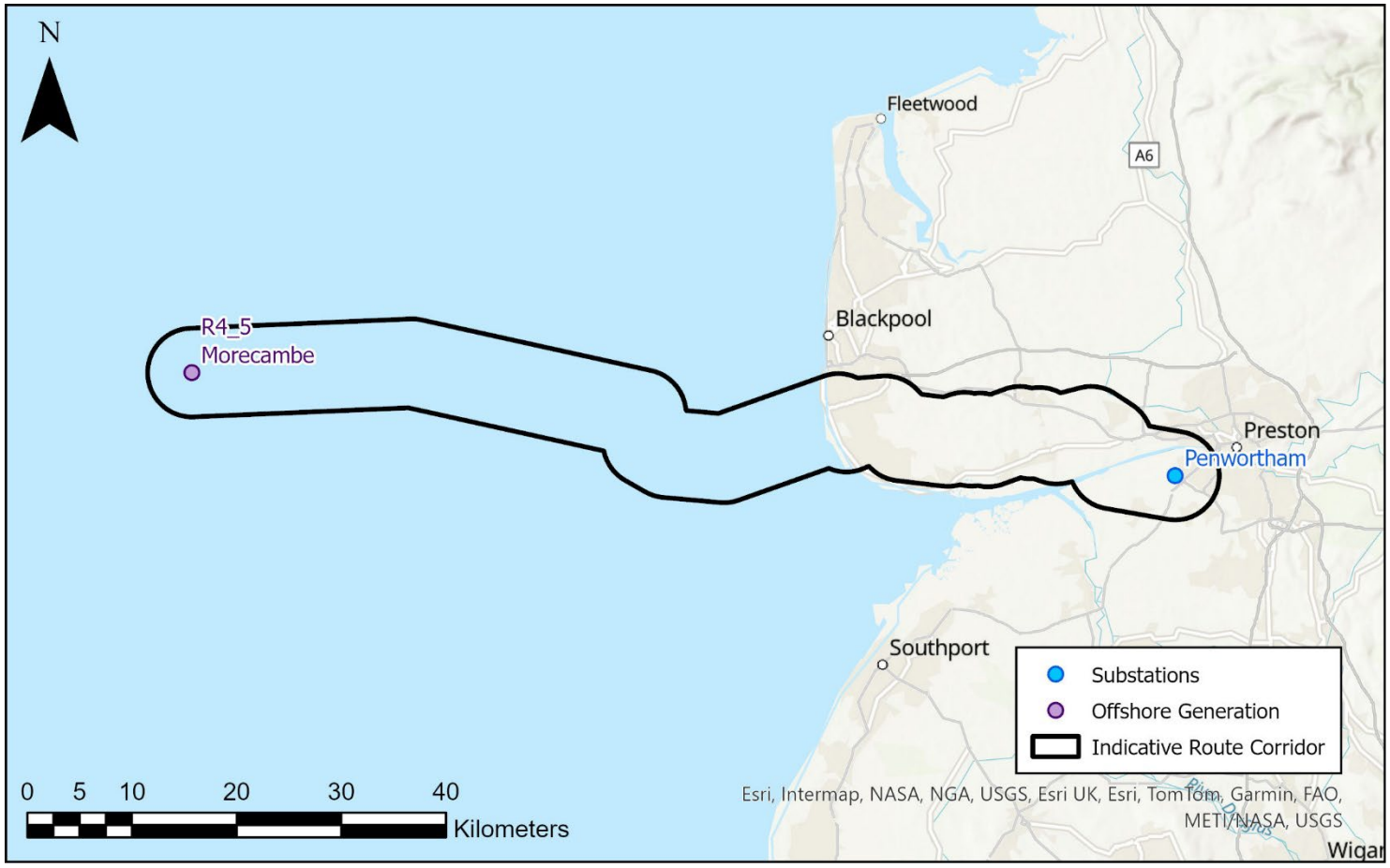
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Liverpool Bay SPA (designated for bird species including red-throated diver, little gull, common scoter, little tern and common tern) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of birds (-2). Avoidance of sensitive times or specific areas used by red-throated divers should be considered at the detailed design stage. The Menai Strait and Conwy Bay SAC (designated for sandbanks, mudflats and sandflats, reefs, sea caves and large shallow inlets and bays) is within the 5km indicative route corridor offshore, while the Elwy Valley Woods SAC (designated for Tilio-Acerion Forest habitat) is within the onshore route corridor. These sites can be avoided by the cable route, avoiding the potential for direct impacts. The Llanddulas Limestone and Gwrych Castle Wood SSSI (designated for grassland, heathland and woodland) and Traeth Pensarn SSSI (designated for bords, reptiles and invertebrates) are within the landfall and onshore route corridor, and the Coed y Gopa SSSI is within the onshore route corridor; however, these sites can be avoided. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall and known locations of Annex I sandbank within the offshore route corridor that cannot be completely avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. There are areas of ancient woodland within the landfall and onshore route corridor, however these can be avoided by the cable route. The North Wales Coast IBA is within the offshore and landfall route corridor and cannot be avoided, and there is potential for short-term direct and direct impacts on birds and supporting habitats during the construction and decommissioning phases and during cable maintenance activities (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban areas of Abergele and Llanddulas are within the route corridor at landfall and the areas of Abergele, Towyn, Bodelwyddan an St Asaph are within the onshore route corridor. However, these areas can all be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is a bathing water area which is	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
potentially avoidable and an unavoidable RYA boating area within the offshore and landfall route corridors. There is potential for short-term direct effects to the RYA boating area and short-term indirect effects to the bathing area including noise, disturbance and water quality impacts (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The onshore Coed y Gopa SSSI can be avoided, avoiding the potential for direct impacts (-1). There are Annex 1 reefs and Annex 1 sandbanks that cannot be avoided (-2) so there is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The remaining agricultural lands are primarily very good and good quality which cannot be avoided (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, there is potential to avoid these at landfall and in the route corridor, lakes will either need avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are areas benefitting from flood defences within the onshore route corridor and at landfall but there is potential to avoid these, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as four offshore cables, the proposed Awel y Mor wind farm site, high-density shipping areas and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, there is a railway line located within the onshore portion of the 5km indicative corridor which cannot be avoided. There are offshore infrastructure (two gas wells and two offshore cables), the Llanddulas Port, the Rhyl Flats wind farm, two wind farm cables (for the Gyynt y Mor OFTO and the Rhyl Flats wind fam), the proposed MaresConnect interconnector, onshore infrastructure (National Grid towers, substations, cables and overhead lines), roads and five urban areas (Towyn, Bodelwyddan, St. Asaph, Abergele and Llanddulas) within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered Parks and Gardens / designed landscapes, listed buildings, Scheduled monuments, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 16 known wreck locations within the offshore route corridor, however, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There are also 9 listed buildings within the route corridor at landfall, and 8 Scheduled monuments and 251 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no landscape designations within the 5km indicative route corridor. The urban areas of Abergele and Llanddulas are within the route corridor at landfall and the areas of Abergele, Towyn, Bodelwyddan and St Asaph are within the onshore route corridor. However, these areas can all be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There are no connections which may impact the link from R4_4 to Bodelwyddan.				

North West Region – NW2 - R4_5 – Penwortham						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_5 Morecambe	Penwortham	60	480	3 AC	1 - 2	Y - HND1
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Liverpool Bay SPA (designated for bird species including red-throated diver, little gull, common scoter, little tern and common tern) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of birds (-2). Avoidance of sensitive times or specific areas used by red-throated divers should be considered at the detailed design stage. The Fylde MCZ (designated for subtidal sediment habitats, flora and fauna) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats and species (-2). The Ribble and Alt Estuaries SPA (designated for breeding common tern and ruff, and non-breeding seabird and waterbird species) and Ramsar site are within the 5km indicative offshore, landfall and onshore route corridor, but can be avoided by the cable route, avoiding the potential for direct impacts. The Ribble & Alt Estuaries SSSI is within the offshore route corridor, the Lytham St Annes Dunes SSSI and Ribble Estuary SSSI are within the landfall and onshore route corridors, and the Newton Marsh SSSI is within the onshore route corridor; however, these sites can be avoided. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef and sandbank within the offshore route corridor and within the route corridor at landfall; Annex I sandbank within the offshore route corridor cannot be completely avoided. There is potential for direct impacts on offshore sandbank (-2) and indirect impacts on reef (-1) during construction and decommissioning and cable maintenance activities. There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route (-1). The Ribble and Alt Estuaries IBA is within the offshore, landfall and onshore route corridor, the Ribble Estuary NNR is within the onshore route corridor, and the Hesketh Out Marsh, Ribble Estuary RSPB site is also within the onshore route corridor; however, these areas can all be avoided; there may be potential for short-term indirect impacts on birds and habitats during the construction and decommissioning phases and during cable maintenance activities, which should be considered at the detailed design stage (-1).	-2	0	0	Direct & Indirect

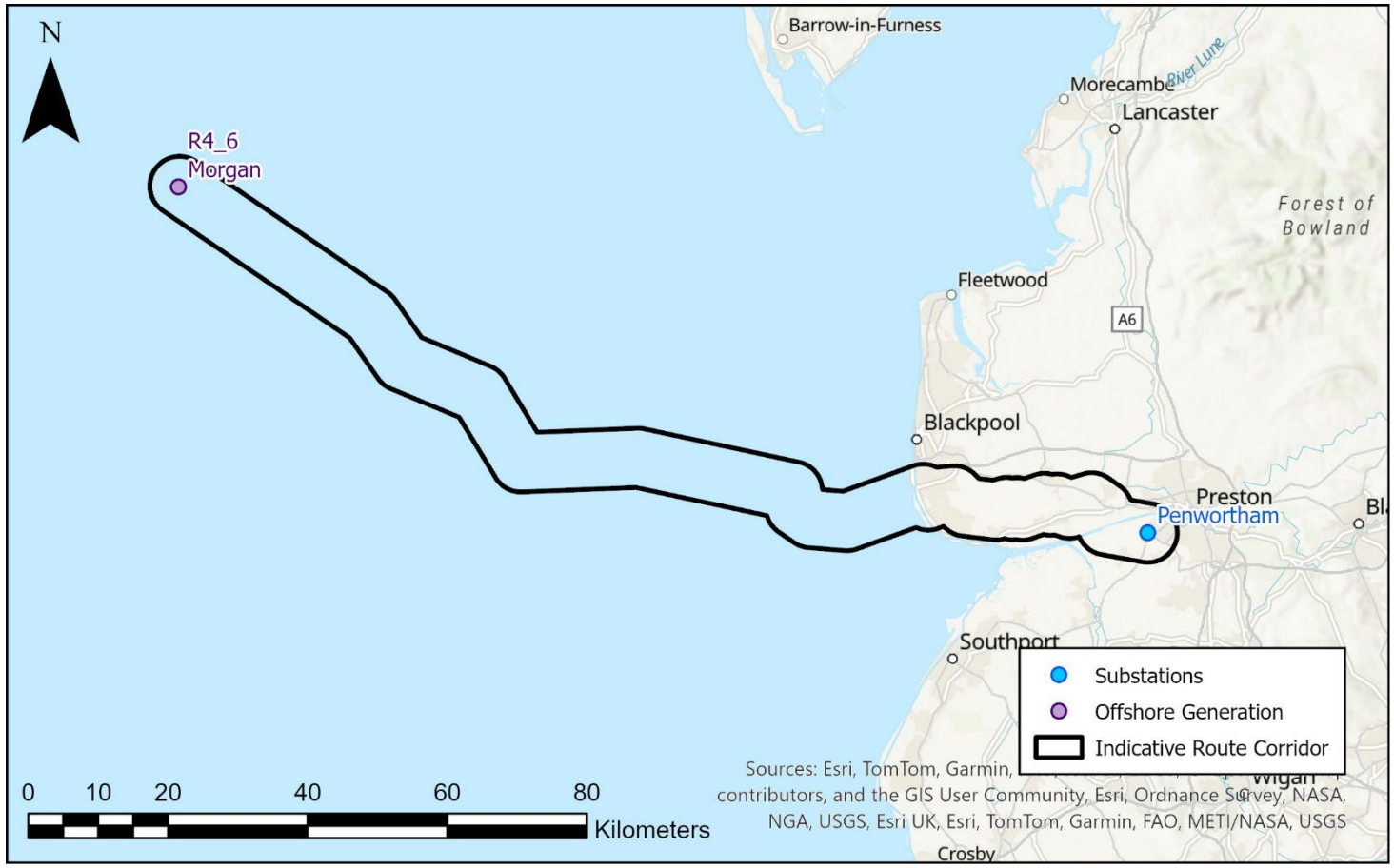
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban areas of Blackpool and St Annes are within the route corridor at landfall and cannot be avoided. The areas of Blackpool, Lytham St Annes and Warton/Kirkham are within the onshore route corridor and also cannot be avoided unless a route is found in the narrow gap occupied by Blackpool airport. There is potential for short-term noise and disturbance effects to many receptors within these higher populated areas during the construction and decommissioning phases and during cable maintenance activities (-3). There are three bathing water sites (Blackpool South, St Annes North and St Annes) within the offshore route corridor which can be avoided. There is potential for short-term indirect effects such as noise, disturbance and water quality impacts to these areas during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-3	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Fylde MCZ (designated for subtidal sediment habitats, flora and fauna) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats and species (-2). There are Annex 1 reefs, the Lytham St Annes Dunes SSSI and the Lytham Coastal Changes SSSI which can be avoided, avoiding the potential for direct impacts (-1). However, there are Annex 1 sandbanks that cannot be avoided (-2) so there is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The remaining agricultural lands are primarily very good and good quality which cannot be avoided (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	*-2*	*0*	*0*	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor, these will either need avoided or crossed	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
within the onshore route corridor. Therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided and will need to be crossed, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are areas benefitting from flood defences within the onshore route corridor, these cannot be avoided and will need to be crossed; therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor. There are known locations of air quality management areas (AQMA) within the onshore route corridor, however these can be avoided (-1). There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two offshore cables are located within the 5km indicative route corridor and cannot be avoided. Additionally, the Blackpool Airport, 3 urban areas (Blackpool, Lytham St Annes and Warton/Kirkham), a railway line and numerous roads are located within the onshore	-3	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
portion of the 5km indicative route corridor. There is offshore infrastructure (ten oil/gas wells, the Morecambe DP3 gas installation, six offshore cables and seven pipelines), Preston Port and three military areas located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-3). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).				
Cultural, Architectural and Archaeological Heritage (CH) There are nine known wreck locations within the offshore route corridor; however, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There are also 16 listed buildings within the route corridor at landfall, and 92 within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. There are two Parks and Gardens within the route corridor at landfall and three within the onshore route corridor. These sites can be avoided by cable routes within the corridor, avoiding the potential for direct impacts on these sites. There may be potential for short-term impacts on the setting of these heritage assets during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no landscape designations within the 5km indicative route corridor. The urban areas of Blackpool and St Annes are within the route corridor at landfall and cannot be avoided. The areas of Blackpool, Lytham St Annes and Warton/Kirkham are within the onshore route corridor and also cannot be avoided unless a route is found in the narrow gap occupied by Blackpool airport. There is potential for short-term visual effects to many receptors within these higher populated areas during the construction and decommissioning phases and during cable maintenance activities.	-3	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
The entire route is in common with the HND R4_6 to Penwortham link, but as this link is for the same project, it would be expected to be co-ordinated.				

North West Region – NW3 - R4_6 – Penwortham						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_6 Morgan	Penwortham	96	1500	4 AC	4	Y – HND1
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Liverpool Bay SPA (designated for bird species including red-throated diver, little gull, common scoter, little tern and common tern) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of birds (-2). Avoidance of sensitive times or specific areas used by red-throated divers should be considered at the detailed design stage. The Fylde MCZ (designated for subtidal sediment habitats, flora and fauna) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats and species (-2). The Ribble and Alt Estuaries SPA (designated for breeding common tern and ruff, and non-breeding seabird and waterbird species) and Ramsar site are within the 5km indicative offshore, landfall and onshore route corridor, but can be avoided by the cable route, avoiding the potential for direct impacts. The Ribble & Alt Estuaries SSSI is within the offshore route corridor, the Lytham St Annes Dunes SSSI and Ribble Estuary SSSI are within the landfall and onshore route corridors, and the Newton Marsh SSSI is within the onshore route corridor; however, all of these sites can be avoided. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef and sandbank within the offshore route corridor and within the route corridor at landfall; Annex I sandbank within the offshore route corridor cannot be completely avoided. There is potential for direct impacts on offshore sandbank (-2) and indirect impacts on reef (-1) during construction and decommissioning and cable maintenance activities. There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route (-1). The Ribble and Alt Estuaries IBA is within the offshore, landfall and onshore route corridor, the Ribble Estuary NNR is within the onshore route corridor, and the Hesketh Out Marsh, Ribble Estuary RSPB site is also within the onshore route corridor; however, these areas can all be avoided; there may be potential for short-term indirect impacts on birds and habitats during the construction and decommissioning phases and during cable maintenance activities, which should be considered at the detailed design stage (-1).	-2	0	0	Direct & Indirect

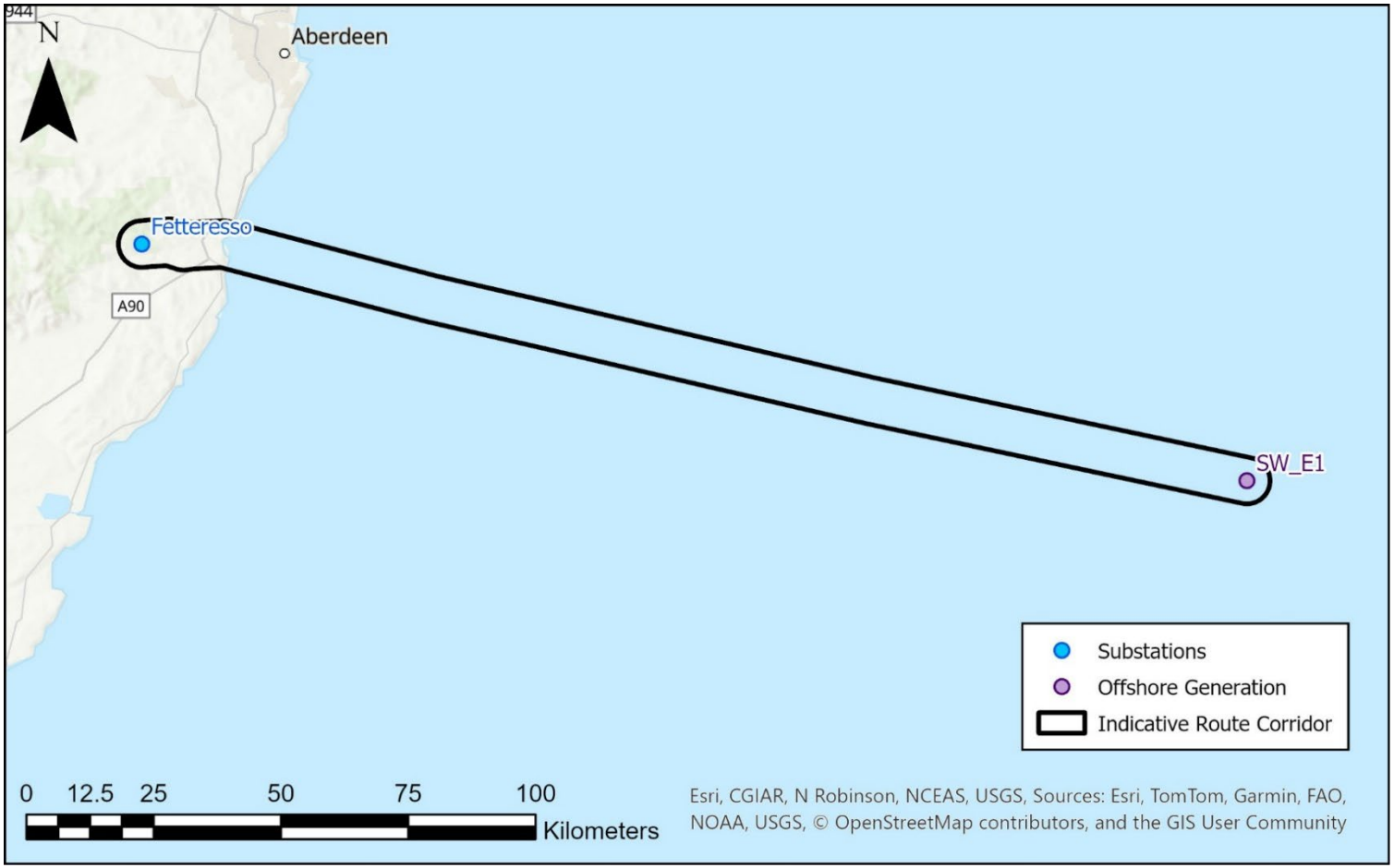
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban areas of Blackpool and Lytham St Annes are within the route corridor at landfall and cannot be avoided. The areas of Blackpool, Lytham St Annes and Warton/Kirkham are within the onshore route corridor and also cannot be avoided unless a route is found in the narrow gap occupied by Blackpool airport. There is potential for short-term noise and disturbance effects to many receptors within these higher populated areas during the construction and decommissioning phases and during cable maintenance activities (-3). There are three bathing water areas (St Annes, Blackpool South and St Annes North) in the offshore route corridor and two in the landfall route corridor (Blackpool and Lytham St Annes). There is the potential to avoid bathing waters within the route corridor or to avoid periods of significant use for bathing. There is potential for short-term indirect noise, disturbance or water quality effects to these areas during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-3	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and Annex 1 sandbanks at landfall, the Lytham St Annes Dunes SSSI and the Lytham Coastal Changes SSSI which can be avoided, avoiding the potential for direct impacts (-1). However, there are offshore Annex 1 sandbanks that cannot be avoided (-2) so there is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The remaining agricultural lands are primarily very good and good quality which cannot be avoided (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor, these will either need avoided or crossed	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
within the onshore route corridor. Therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided and will need to be crossed, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). Areas are benefiting from flood defences within the onshore route corridor, these cannot be avoided and will need to be crossed; therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of air quality management areas (AQMA) within the onshore route corridor, however these can be avoided (-1). There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as three offshore cables, two offshore pipelines and a high-density fishing area are located within the 5km indicative route corridor and cannot be avoided. Additionally, the Blackpool Airport, three urban areas (Blackpool, Lytham St Annes and Warton/Kirkham), a	-3	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
railway line and numerous roads are located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (ten oil/gas wells, four oil/gas installations, seven offshore cables and 23 offshore pipelines), Preston Port and three military areas located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-3). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 13 known wreck locations within the offshore route corridor; however, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There are also 16 listed buildings within the route corridor at landfall, and 92 within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. There are two Parks and Gardens within the route corridor at landfall and three within the onshore route corridor. These sites can be avoided by cable routes within the corridor, avoiding the potential for direct impacts on these sites. There may be potential for short-term impacts on the setting of these heritage assets during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no landscape designations within the 5km indicative route corridor. The urban areas of Blackpool and Lytham St Annes are within the route corridor at landfall and cannot be avoided. The areas of Blackpool, Lytham St Annes and Warton/Kirkham are within the onshore route corridor and also cannot be avoided unless a route is found in the narrow gap occupied by Blackpool airport. There is	-3	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
potential for short-term visual effects to many receptors within these higher populated areas during the construction and decommissioning phases and during cable maintenance activities (-3). In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
The route is in common with the HND R4_5 to Penwortham link, but as this link is for the same project, it would be expected to be co-ordinated.				

SW_E1 – Fetteresso/Hurlie						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1	Fetteresso	121	1500	4 AC	4	Y – HND1
Overview of Route						



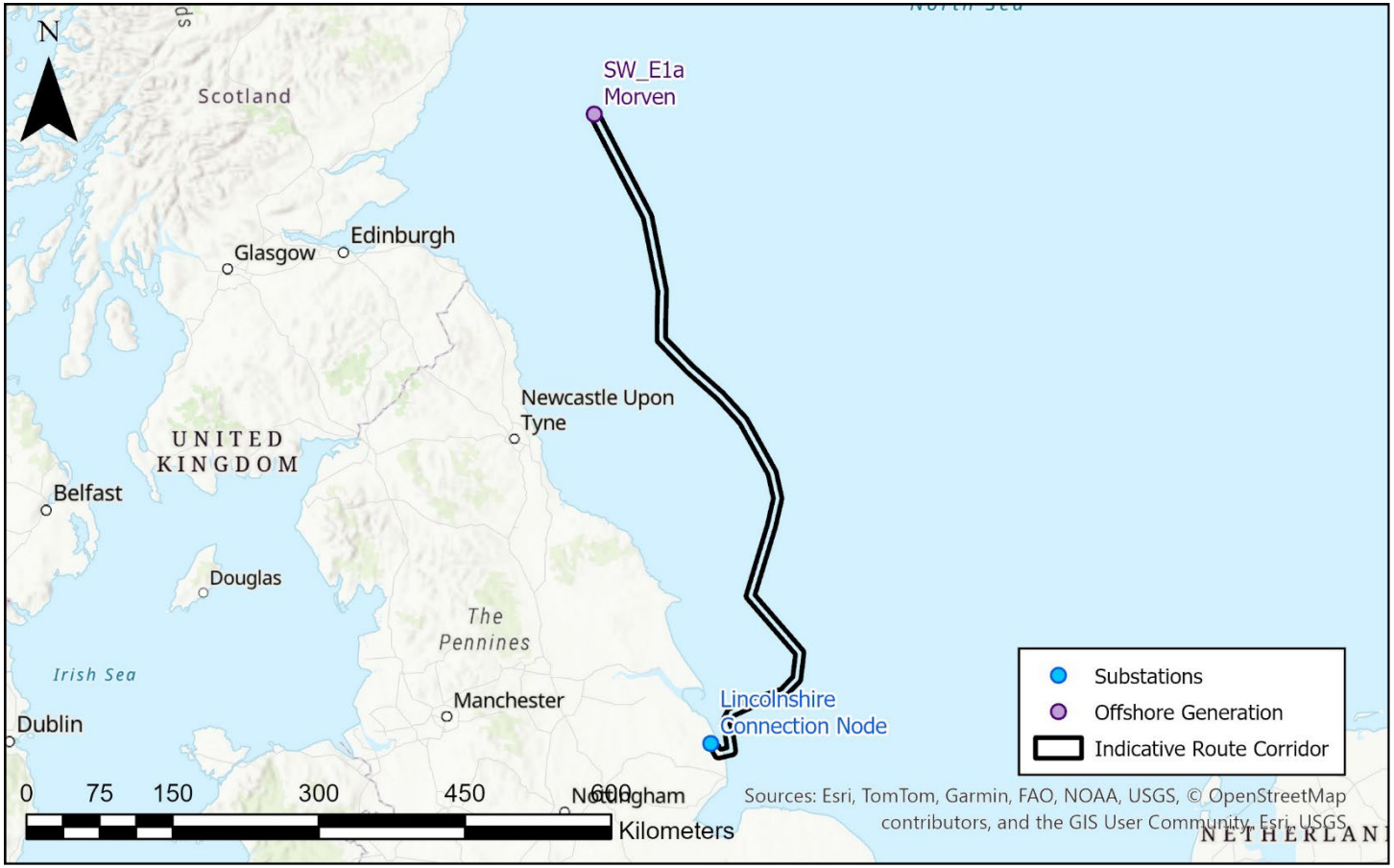
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Garron Point SAC (designated for narrow-mouth whorl snail), Fowlsheugh SPA (designated for seabirds including common guillemot and black-legged kittiwake and nationally important populations of razorbill, northern fulmar and herring gull), and Garron Point SSSI are within the route corridor at landfall, with limited potential to avoid both sites as well as an urban area. There may be potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species or damage to supporting habitats (-2). The Firth of Forth Banks Complex MPA (designated for subtidal shelf banks and mounds) and Fowlsheugh SPA are within the offshore route corridor but can be avoided by the cable route, avoiding the potential for direct impacts. The Garron Point SAC, Fowlsheugh SPA, Garron Point SSSI, and Loch of Lumgair SSSI are also within the onshore route corridor but can be avoided. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, which cannot be avoided. There is potential for direct impacts and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities, which may be long-term to permanent in nature (-2). There are areas of ancient woodland within the landfall and onshore route corridor, however these can be avoided by the cable route (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Stonehaven is within the route corridor at landfall with limited potential for avoidance due to technical constraints associated with cliffs in alternative landfall areas. There is potential for direct short-term noise and disturbance effects to many receptors during the construction and decommissioning phases and during cable maintenance activities (-3). The urban area of Fetteresso is also within the onshore corridor but can be avoided, avoiding the potential for direct impacts to receptors in this area. The Stonehaven bathing waters are located within the offshore and landfall route corridors but can be avoided by the cable route. There is potential for indirect short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the bathing waters during the construction and decommissioning phases and during	-3	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The dredge and spoil dumping sites, the onshore Garron Point SSSI and the Firth of Forth Banks Complex MPA can be avoided, avoiding the potential for direct impacts (-1). There are also Annex 1 reefs and the Garron Point SSSI at landfall, but these cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There is a lake within the 5km indicative route corridor onshore, but there is potential to avoid this, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, the Stonehaven urban area, three onshore gas pipelines and numerous roads are located within the onshore portion of the 5km indicative corridor and cannot be avoided. There is offshore infrastructure (one oil/gas diffuser), a designated anchorage area within Stonehaven Bay, a marina at Stonehaven Harbour, two dredge and spoil dumping sites, a railway line and the Fetteresso urban area within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-3). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-3	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are ten known wreck locations within the offshore route corridor and two within the route corridor at landfall. There are three Scheduled monuments within the route corridor at landfall and 12 within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban area of Stonehaven is within the route corridor at landfall with limited potential for avoidance due to technical constraints associated with cliffs in alternative landfall areas. There is potential for short-term visual effects to many receptors within this higher populated area during the construction and decommissioning phases and during cable maintenance activities (-3). The urban areas of Stonehaven and Fetteresso are also within the onshore route corridor but can be avoided by the cable route. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-3	0	0	Direct & Indirect
Cumulative and in combination issues				
There are multiple HND offshore proposed cables that cross the SW_E1 – Fetteresso link. The landfall is also shared with the HND SW_E1a (Morven) to Fetteresso/Fiddes route.				

South East Cluster – SW_E1a (Morven) to Lincolnshire Connection Node						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a Morven	Lincolnshire Connection Node	460	1800	2 DC	1	Y – HND1
Overview of Route						



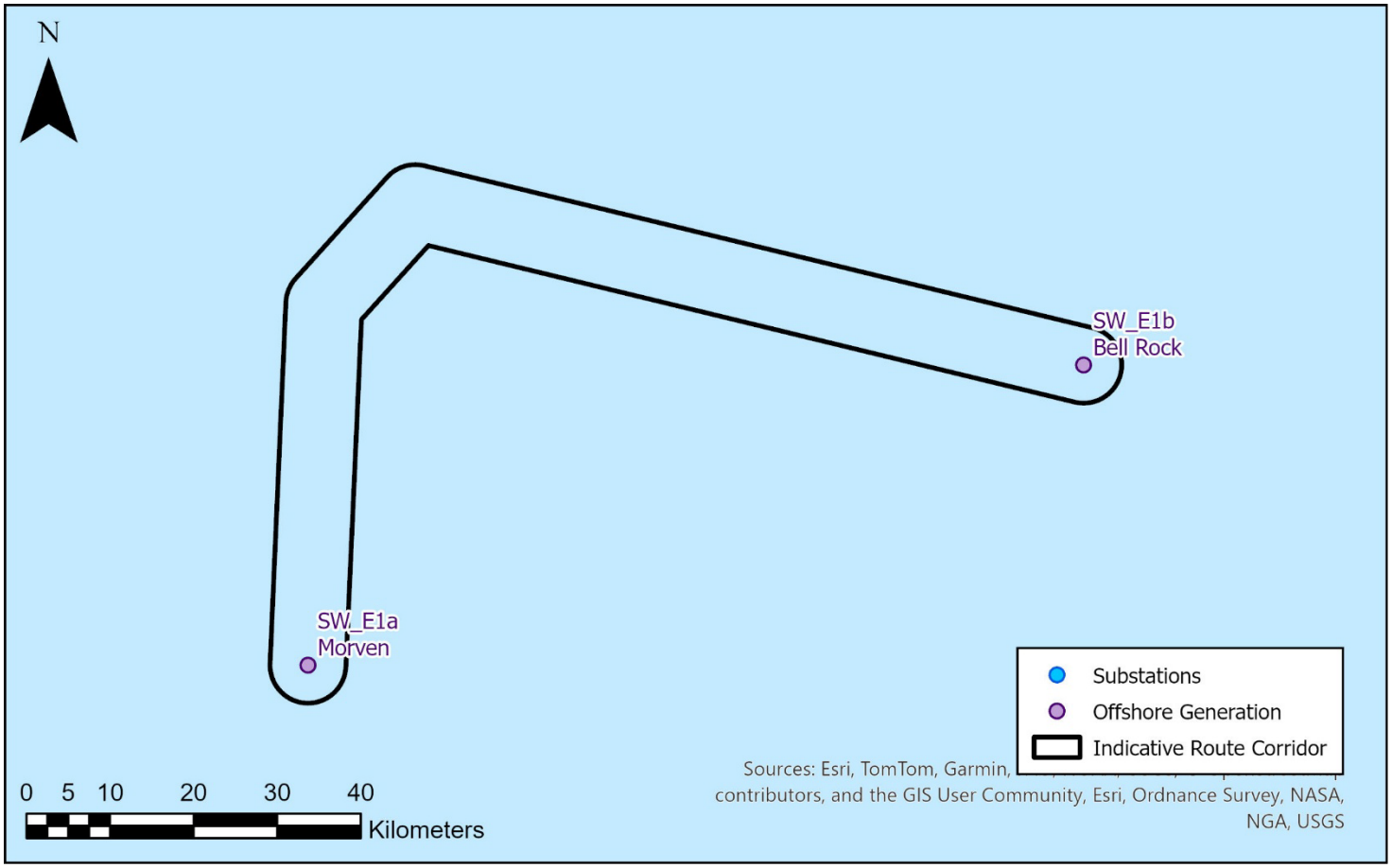
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Sea Bank Clay Pits SSSI is also within the route corridor at landfall and onshore, but can be avoided by the cable route, however, the potential for indirect impacts on site features will need to be considered at the project stage (-1). There are known locations of Annex I reef within the route corridor offshore, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity (-1). There is known high density of grey seals within the offshore route corridor and at landfall. This area cannot be avoided offshore and there is potential for direct and indirect impacts on the species in the short-term construction and decommissioning phases and during cable maintenance activities including damage, disturbance and displacement, which will need to be considered at the project stage (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban area of Sandilands is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for significant direct effects (-1). There are two avoidable bathing water sites (Moggs Eye, Sutton-On-Sea) and an unavoidable RYA boating area within the offshore and landfall route corridors. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the bathing waters (indirect) and boating area (direct) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and the Bilsby, Meers Bank Drain which can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality with a small area of very good quality land that can be avoided (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (460.4 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 15 offshore cables, 12 pipelines, 2 existing offshore generation site cables (to Hornsea 1 and Hornsea 2 offshore wind farms), high-density shipping areas, 3 military areas (Donna Nook, Staxton and Druridge Bay) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (39 oil/gas wells, 9 oil/gas installations and 1 offshore cable), 1 existing energy generation site cable for the Triton Knoll windfarm and the Sandilands urban area within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 43 known wreck locations within the offshore route corridor. There are also 4 listed buildings at landfall, and 43 listed buildings and 5 Scheduled monuments within the onshore route corridor. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban area of Sandilands is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The landfall location is south of Sandilands and shares a similar landfall to HND routes into Lincolnshire Connection Node and these may require a coordinated approach with this route and potentially planned east coast bootstraps from Scotland. The offshore approach is spatially constrained due to a small gap of 10km for all connections to pass through with other existing cables. There are also cable crossings for HND routes required in waters less than 10m in depth. This would be advantageous as the routes also cross HND routes to Birkhill Wood and pass through the same gap between environmental designations (e.g. between the proposed North East of Farnes Deep HPMA and the Swallow Sand MCZ).				

SW_E1a - SW_E1b						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a Morven	SW_E1b Bell Rock	77	1200	4 AC	4	Y – HND1
Overview of Route						

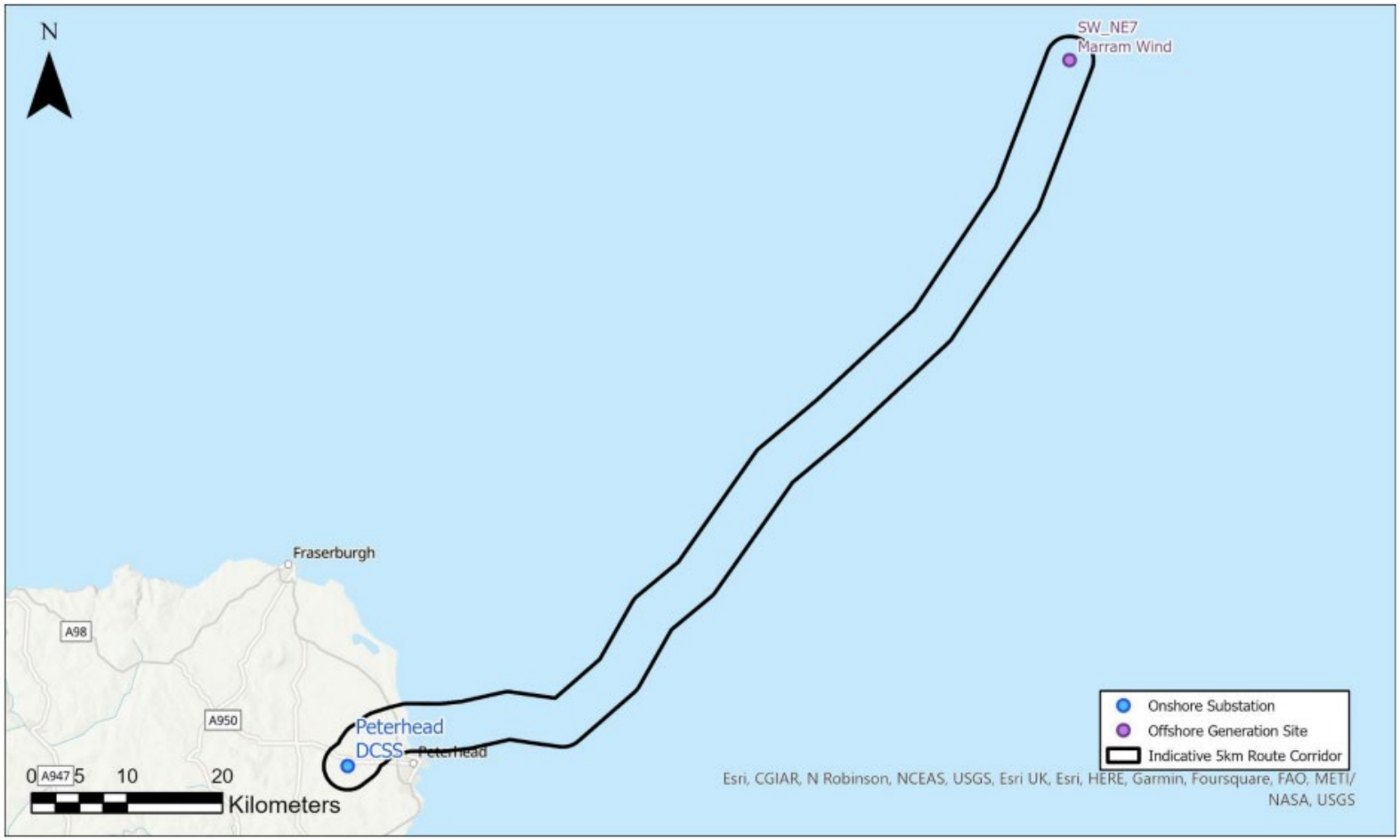


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor which is located entirely offshore. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There are no significant material assets and infrastructure located within the 5km indicative route corridor. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is no potential for short-term direct or indirect effects on significant material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities (0). There is the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	0	0/+1	0/+1	Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Conservation Areas, Scheduled monuments or listed buildings within the 5km indicative route corridor, which is located entirely offshore. There are two known wreck locations within the offshore route corridor, however, these can be avoided by the cable route, avoiding the potential for direct negative impacts (-1). In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
There are no identified cumulative and in combination constraints identified, although interaction with turbine siting and inter-array cables will need to be considered at DND stage.				

SW_NE7 – Peterhead2/DCSS						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE7 Marram	Peterhead2/DCSS	113	1500	2 DC	1	Y – HND1
Overview of Route						



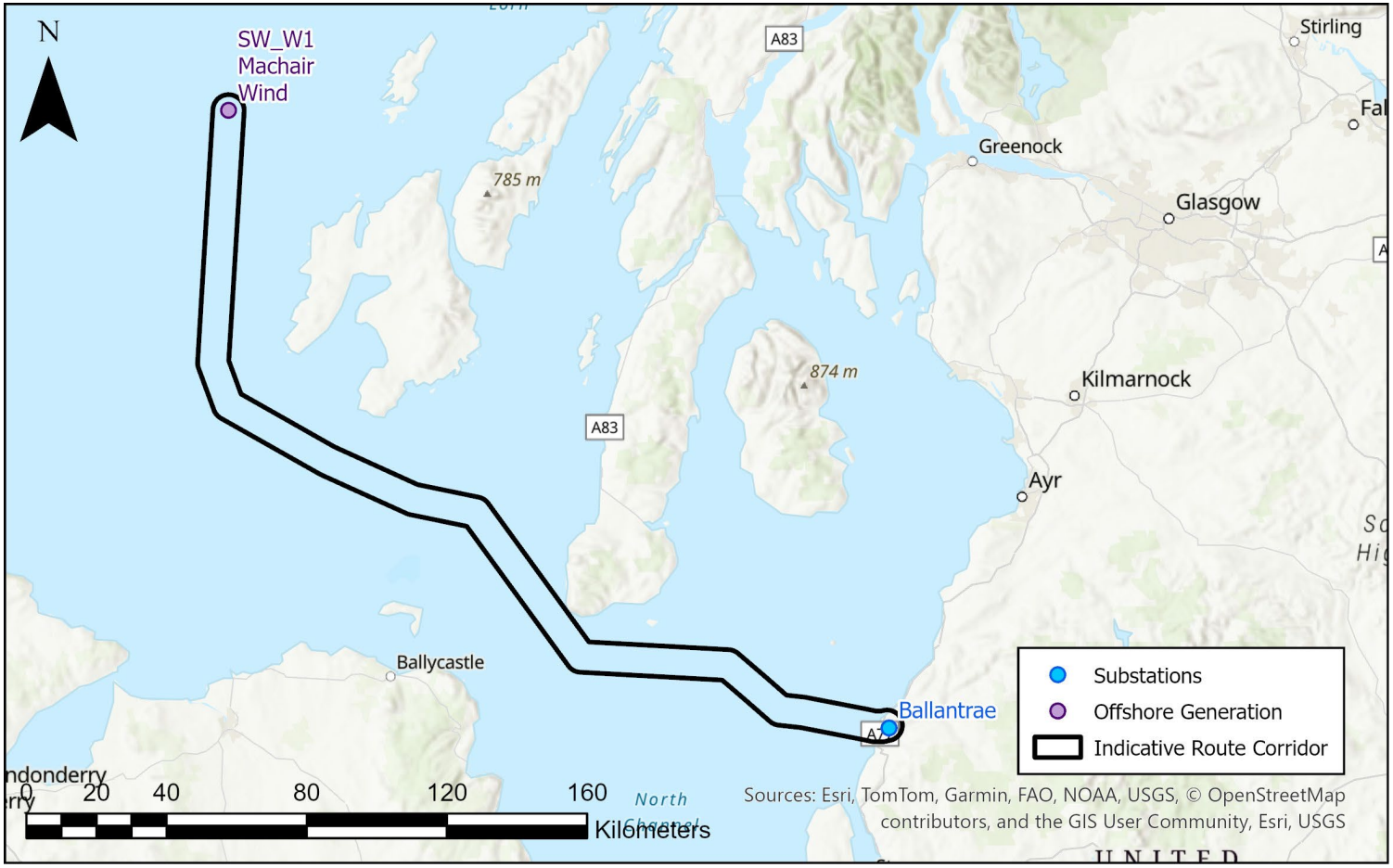
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). There may be a requirement for rock protection within the site owing to the crossing of a gas pipeline by the cable route. The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat, however the potential for long-term effects on habitats will need to be considered and avoided at the detailed design stage. There are known locations of Annex I reef within the offshore route corridor and at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity. There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban area of Peterhead is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and dredge and spoils sites within the 5km indicative route corridor, but both can be avoided (-1). However, the Southern Trench MPA within the route corridor cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure.	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are rivers within the route corridor onshore that will either need to be avoided or crossed, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones onshore and dredge and spoil dumping sites offshore within the route corridor; these can be avoided, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA)	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for short-term negative effects on MA as seven gas pipelines are within the vicinity of the St Fergus Gas Terminal, which will need to be crossed. High-density shipping areas and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (16 oil/gas wells and three offshore cables), a dredge spoil site, onshore infrastructure (two National Grid gas pipelines) and the Peterhead urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 14 known wreck locations within the offshore route corridor and one known wreck location within the route corridor at landfall, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument within the route corridor at landfall and five Scheduled monuments and one listed building within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, or National Trust lands within the 5km indicative route corridor. The urban area of Peterhead is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. A part of the Formartine and Buchan Way National Trail is within the onshore route corridor, however, can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for short-	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
term indirect visual impacts within this area during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
There are multiple proposed offshore cables that overlap the SW_NE7 to Peterhead2/DCSS connection so this will need to be considered at the detailed design stage. There are urban areas surrounding the landfall so these will need to be considered.				

West Scotland Region – SW_W1 - Ballantrae						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW-W1 Machair	Ballantrae	176	2000	2 HVDC with DMR	2	Y – HND1
Overview of Route						



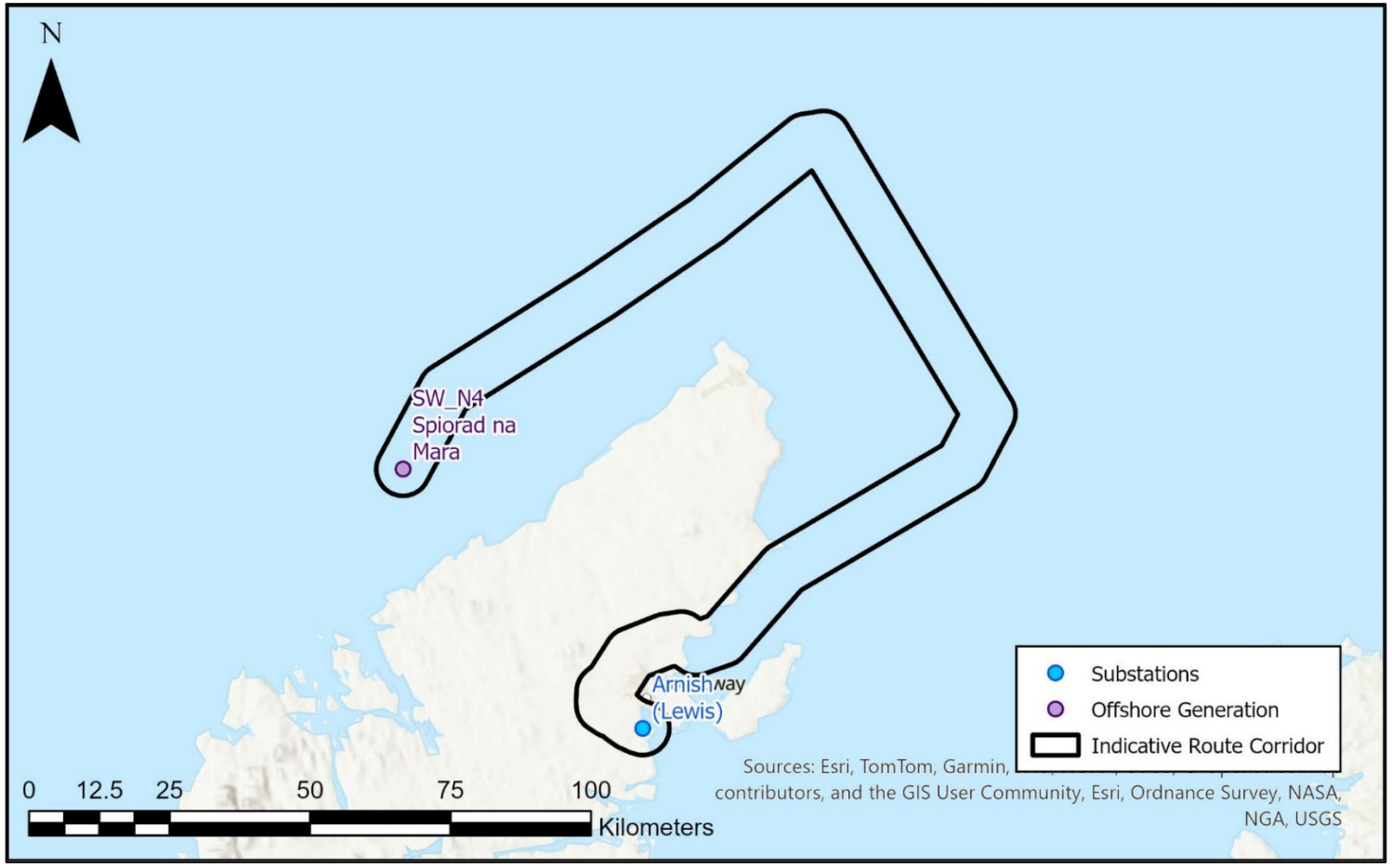
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Clyde Sea Sill MPA (designated for sand and coarse sediment communities, fronts and black guillemot) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to protected habitat and disturbance and displacement of protected species (-2). The Bennane Head Grasslands SSSI is within the landfall and onshore route corridor but can be avoided. There may be potential for short-term indirect impacts on the protected features of this site during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). The Galloway and Southern Ayrshire Biosphere Reserve is also within the landfall and onshore route corridor and cannot be avoided, and there is potential for short-term direct and indirect impacts on the flora and fauna within this site (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, which cannot be avoided or there is limited potential to avoid. There is potential for direct and indirect impacts during construction and decommissioning and cable maintenance activities; direct impacts have the potential to be long-term or permanent (-2). There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Girvan to Ballantrae Coast Section can be avoided, avoiding the potential for direct impacts (-1). However, there are also Annex 1 reefs and the Clyde Sea Sill MPA that cannot be avoided (-2) so there is potential for short-term	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality and the small area along the coast that is very good quality land can be avoided (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these can potentially be avoided, avoiding the potential for direct impacts. There are National Flood Zones within the onshore route corridor and at landfall; these cannot be entirely avoided within the onshore corridor, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as five offshore cables, the Campbeltown Military Area and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are numerous roads located within the onshore portion of the 5km indicative corridor, which cannot be avoided. The North Channel Traffic Separation Zone and the proposed Argyll Tidal farm are located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 12 known wreck locations within the offshore route corridor; however, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There is also one listed building within the route corridor at landfall, and one within the onshore route corridor. However, these can also be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The Ayrshire Coastal Path National Trail is within the route corridor at landfall and onshore and cannot be avoided. There is potential for short-term visual effects within this area during the construction and decommissioning phases and during cable maintenance activities (-2). There are no major settlements or urban areas within the route corridor. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
There is potential for in combination impacts and hence a need for coordination with other connections to the Ballantrae Bussing Site from Kilmarnock and Pentir. The offshore route generally avoids passing through large areas of environmental designations, although part of the Clyde Sea Sill MPA is unavoidable. The onshore route avoids urban areas and onshore designations. The HND SW_W1 to Ballantrae link shares a similar landfall and onshore route to the Ballantrae to Pentir and Kilmarnock South to Ballantrae routes.				

SW_N4 – Arnish Alternative						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_N4 Spiorad na Mara	Arnish	133	1000	3 HVAC	3	N - HND
Overview of Route						



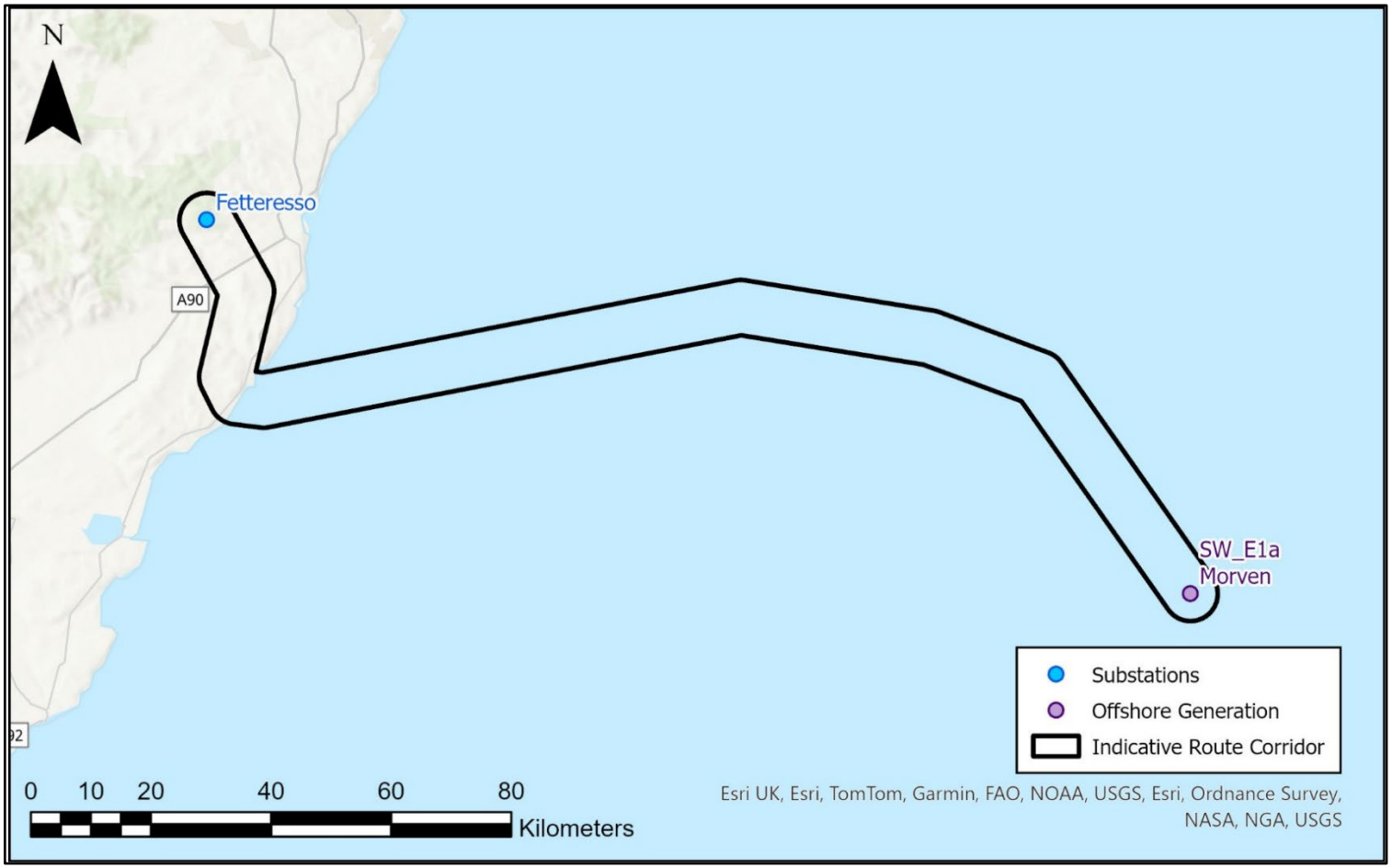
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are designated sites within the 5km indicative route corridor that cannot be avoided. The Inner Hebrides and the Minches SAC (designated for harbour porpoise) is within the offshore route corridor and the North-East Lewis MPA (designated, in part, for Risso's dolphin and sandeels) is within the offshore and landfall route corridor and cannot be avoided. The Lewis Peatlands SPA (designated for breeding Black-throated diver, Dunlin, Golden Eagle, Golden plover, Greenshank, Merlin, Red-throated diver) and the Lewis Peatlands Ramsar are within the onshore route corridor, with limited potential for avoidance. There is potential for short-term direct and indirect impacts within these sites from disturbance of designated species or loss/damage to supporting habitats within these sites in the construction and decommissioning phases and during any cable maintenance activities (-2). There are also designated sites within the route corridor that can be avoided. The Lewis Peatlands SAC (designated for blanket bog, heathland and lake habitats as well as otter) is within the onshore route corridor, and there may be potential for short-term, indirect impacts on designated habitat within this site (-2). The Gress Saltings (designated for saltmarsh) SSSI and Tong Saltings SSSI (designated for its breeding bird assemblage, mudflats, saltmarsh and sand dunes) are also within the route corridor at landfall and onshore but can be avoided. There may be potential for indirect effects on these sites in the short-term construction and decommissioning phases and during any cable maintenance activities, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, and known locations of Annex I saltmarsh onshore, which are possible to avoid. There is potential for indirect impacts on these habitats during construction and decommissioning (-1). The Lewis Peatlands IBA and Stornoway to Back, Lewis IBA are within the 5km indicative onshore route corridor and cannot be avoided and there is potential for direct short-term impacts within these areas through disturbance of bird species and short-term loss/damage of supporting habitats (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban areas of Bac and Tunga are within the route corridor at landfall and onshore and the urban area of Stornoway is also within the onshore route corridor, but can be avoided, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs which can be avoided, avoiding the potential for direct impacts (-1). The North-east Lewis MPA cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily poor quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases as well as during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, there is limited scope to avoid these at landfall and these cannot be completely avoided within the route corridor; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; there is potential to avoid these at landfall but there is limited scope to avoid these within the route corridor, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the onshore route corridor, however these can be	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. A designated anchorage area, Stornoway Port, Stornoway Marina and three urban areas (Stornoway, Bac and Tunga) are located within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are three known wreck locations within the offshore route corridor. There are also four Scheduled monuments within the onshore route corridor. However, all of these assets can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). The Lews Castle and Lady Lever Park is within the onshore route corridor but can be avoided, avoiding the potential for direct impacts; there may be potential for indirect impacts on the setting within this area, which should be considered at the detailed design stage. In general, there is also potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban areas of Bac and Tunga are within the route corridor at landfall and onshore and the urban area of Stornoway is also within the onshore route corridor, but can be avoided, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There is also a proposal for a major housing development at Newmarket on the northern edge of Greater Stornoway which may impact on the onshore cable route around Stornoway which both the SW_N3 and SW_N4 connections need to follow.				

East Scotland (SSE) Region Integrated – ESIn11 - SW_E1a - Fetteresso						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a Morven	Fetteresso	116	1500	4 AC	4	Y – HND1
Overview of Route						

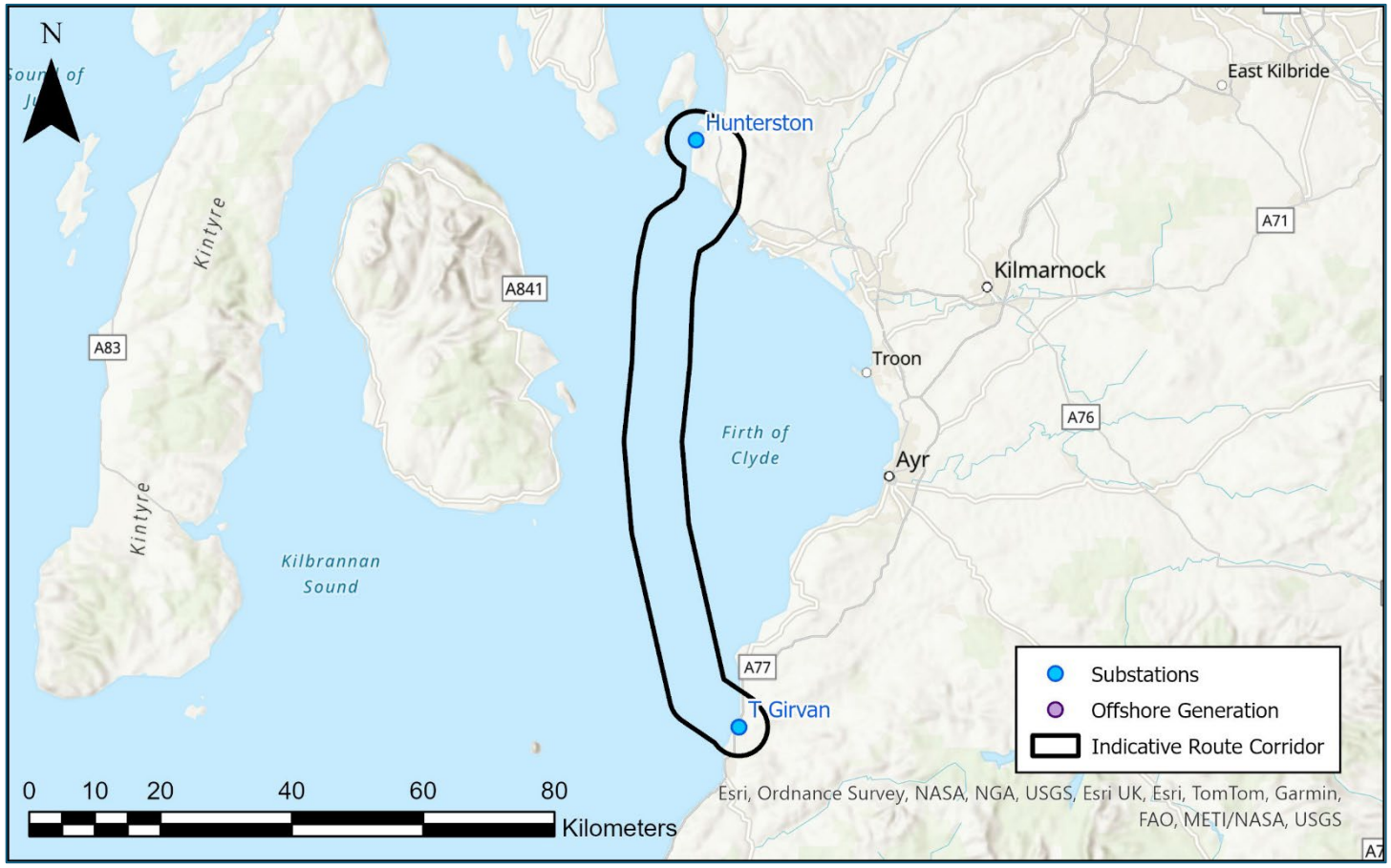


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites within the 5km indicative route corridor. There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, which cannot be avoided. There is potential for direct impacts and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities, which may be long-term to permanent in nature in the footprint of infrastructure (-2). There are areas of ancient woodland within the landfall and onshore route corridor, however these can be avoided by the cable route (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Inverbervie is within the route corridor at landfall and onshore but can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Burn of Benholm SSSI can be avoided, avoiding the potential for direct impacts (-1). There are also Annex 1 reefs that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads and onshore infrastructure (three gas pipelines), which cannot be avoided, are located within the onshore portion of the 5km indicative route corridor. There is a railway line and the urban area of Inverbervie located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 16 known wreck locations within the offshore route corridor and two within the route corridor at landfall. There is one Scheduled monument within the route corridor at landfall and six Scheduled monuments and two listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. The Arbuthnott House Park/Garden is within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban area of Inverbervie is within the route corridor at landfall and onshore but can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There are no cumulative and in combination constraints identified.				

NWIn12: Hunterston – Girvan T						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Hunterston	Girvan T	55	2000	2 HVDC submarine cables	1 HVDC underground cable trench	N – HND1
Overview of Route						



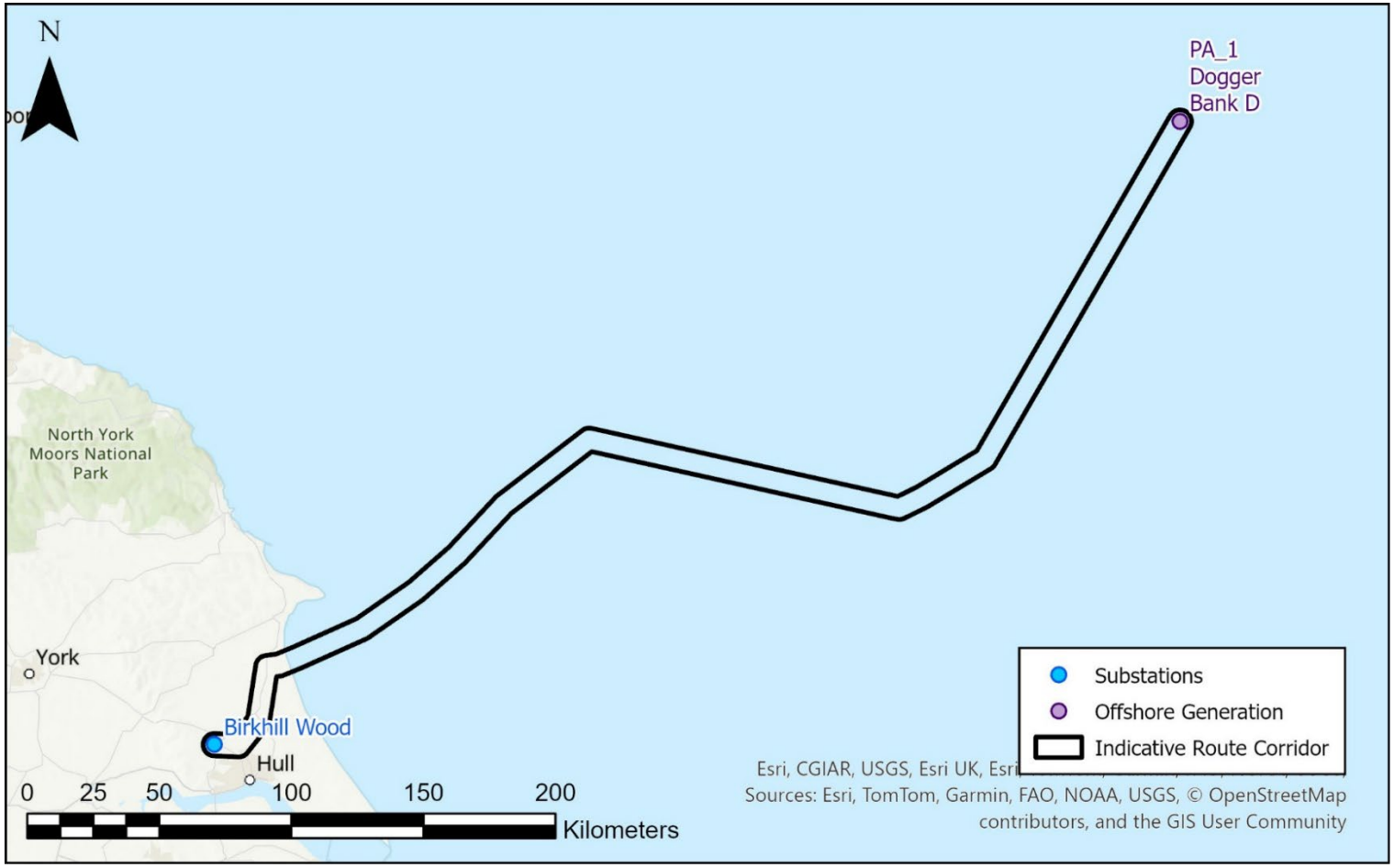
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are several designated sites within the route corridor that can be avoided. The South Arran MPA (designated for diverse marine habitats and ocean quahog) is within the offshore route corridor, and the Portencross Woods SSSI (designated for woodland), and Southannan Sands SSSI (designated for sandflats) are within the route corridor at landfall. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, which there is limited scope to avoid. There is potential for direct impacts and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities, which may be long-term to permanent in nature in the footprint of infrastructure (-2). There are areas of ancient woodland within the landfall route corridor, however these can be avoided by the cable route (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of the Hunterston Nuclear Power Station and the area of West Kilbride are within the route corridor at landfall and onshore for Hunterston, and the industrial estate area at Chapeldonan is within the landfall and onshore route corridor at Girvan. These areas can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The dredge and spoil dumping sites and the South Arran MPA that can be avoided, avoiding the potential for direct impacts (-1). However, the Annex 1 reefs within the 5km indicative route corridor cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good to moderate quality (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall at Hunterston but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these will need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided at landfall but cannot be avoided within the onshore corridor, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore; however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 12 offshore cables, high-density shipping areas and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (two oil/gas wells), one dredge and spoil dumping site, an area of navigational dredging, onshore infrastructure (Scottish Power cables, towers and overhead lines), a shipping lane at Hunterston Channel, Hunterston Port, a railway line, and four urban areas (Girvan, West Kilbride, Chapeldonan and Hunterston) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Conservation Areas or listed buildings within the 5km indicative route corridor. There are 13 known wreck locations within the offshore route corridor and one within the route corridor at landfall and four within the onshore route corridor at Hunterston, and one within the landfall route corridor at Girvan; however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There are also four Scheduled monuments within the onshore route corridor at Hunterston and three within the onshore route corridor at Girvan. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity (L) The Ayrshire Coastal Path National Trail is within the route corridor at landfall and onshore for Hunterston and at landfall for Girvan, and cannot be avoided by the cable route, and there is potential for short-term direct visual impacts within this area during the construction and decommissioning phases, and during cable maintenance activities (-2). The urban area of the Hunterston Nuclear Power Station and the area of West Kilbride are within the route corridor at landfall and onshore for Hunterston, and the industrial estate area at Chapeldonan is within the landfall and onshore route corridor at Girvan. These areas can be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect
Cumulative and in combination issues				
At the Girvan Tee to Hunterston connection the offshore route overlaps the Kilmarnock south to Ballantrae connection. The two HND routes SW_W1 to Girvan Tee and Girvan Tee to Pentir connections also landfall here so will need to be considered during the detailed design stage. At the Hunterston substation there are no other proposed landfall connections.				

South East Cluster – PA_1 to Birkhill Wood						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PA_1 Dogger Bank D	Birkhill Wood	290	1440	2 DC	1	Y – HND1
Overview of Route						



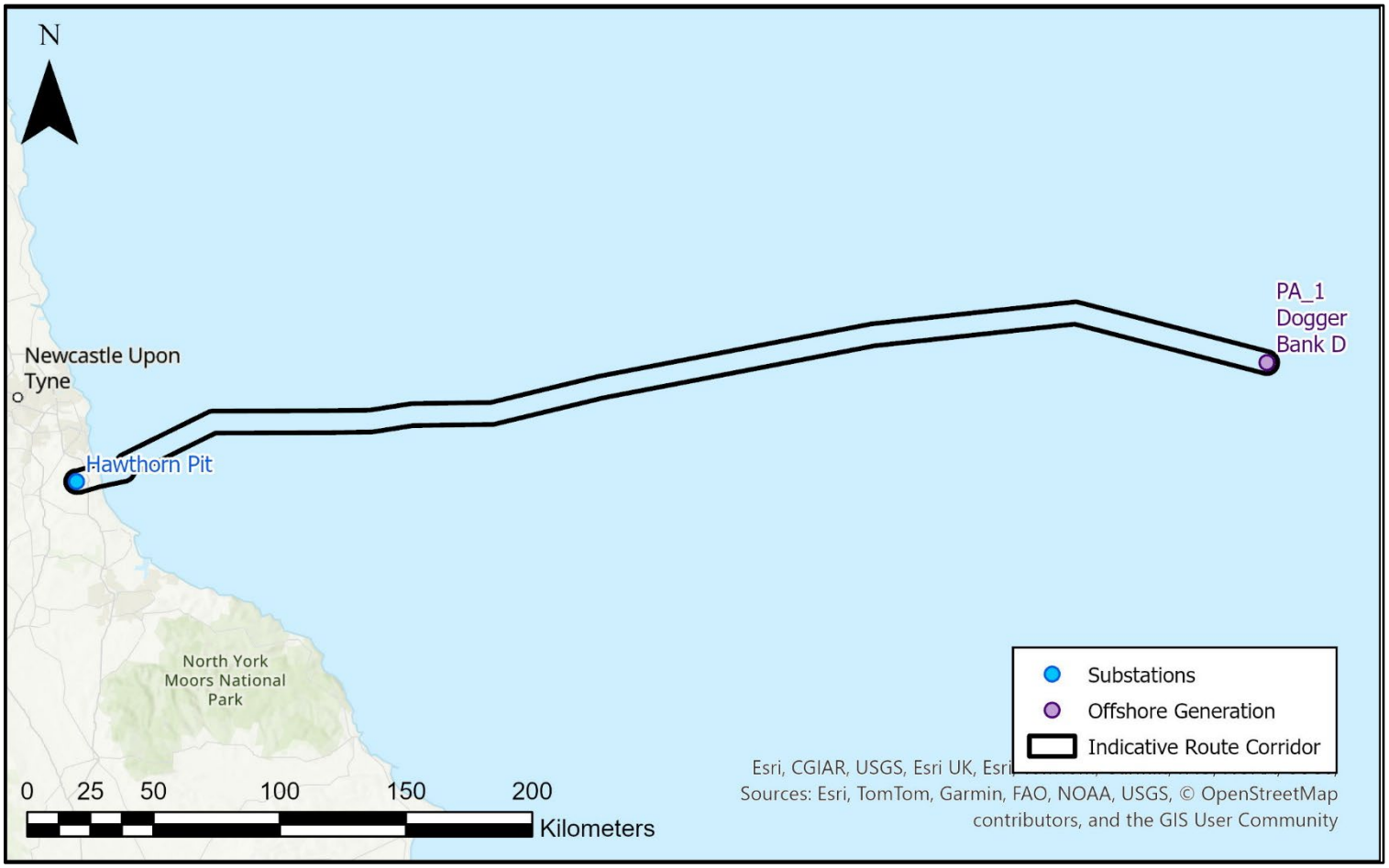
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided as the generation site is located within the SAC. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Holderness Offshore MCZ (designated subtidal coarse and mixed sediment, subtidal sand, North Sea glacial tunnel valleys and Ocean quahog) is within the offshore route corridor, the Holderness Inshore MCZ (designated for muds, sands, rock and coarse and mixed sediments) is within the offshore and landfall route corridor, and the Leven Canal SSSI is within the onshore route corridor; however, all of these sites are avoidable by the cable route; there is potential for short-term indirect impacts on protected features, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef and sandbank within the offshore route corridor and within the route corridor at landfall; Annex I sandbank cannot be completely avoided. There is potential for direct impacts on offshore sandbank (-2) and indirect impacts on reef (-1) during construction and decommissioning and cable maintenance activities. There is an area of ancient woodland within the onshore route corridor, however this can be avoided by the cable route (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) There are urban areas throughout the onshore route corridor, including Beeford, Brandesburton, Leven, Beverly, Woodmansey and Cottingham; however, these areas can all be avoided by the cable route, avoiding the potential for significant direct effects (-1). The Skipsea bathing waters are within the offshore and landfall route corridors but can be avoided. There is also an RYA boating area within the offshore and landfall route corridors which cannot be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the bathing area (indirect) and the boating area (direct) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Annex 1 reefs, the Holderness Inshore MCZ, Holderness Offshore MCZ and Withow Gap, Skipsea SSSI can be avoided, avoiding the potential for direct impacts (-1). However, there are also Annex 1 sandbanks that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily very good and good quality that cannot be avoided (-2). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided and would need to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are areas benefiting from defences at landfall, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (290.8 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 2 offshore cables, 8 offshore pipelines and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, a railway line, numerous roads and onshore infrastructure (two National Grid gas pipelines) are located within the onshore portion of the 5km indicative corridor and cannot be avoided. There is offshore infrastructure (28 oil/gas wells and one oil/gas installation), one onshore military area, onshore infrastructure (National Grid transmission towers and an overhead line) and seven urban areas (Beeford, Brandesburton, Leven, Beverly, Woodmansey, Kingswood and Cottingham) within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-2	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).				
Cultural, Architectural and Archaeological Heritage (CH) There are 39 known wreck locations within the offshore route corridor, and one within the route corridor at landfall; however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is 1 Scheduled monument and 1 listed building within the route corridor at landfall, and 12 Scheduled monuments and 70 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified areas of landscape sensitivity within the route corridor. There are urban areas throughout the onshore route corridor, including Beeford, Brandesburton, Leven, Beverly, Woodmansey and Cottingham; however, these areas can all be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There is significant potential for in combination effects between the route from PA_1 to Birkhill Wood and other connections to Birkhill Wood including those from Dogger Bank South West and East as they all share common routing on the approach to shore and onshore.				

PA_1 – Hawthorn Pit						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PA_1 Dogger Bank D	Hawthorn Pit	277	1800	2 HVDC	1	N – HND1
Overview of Route						



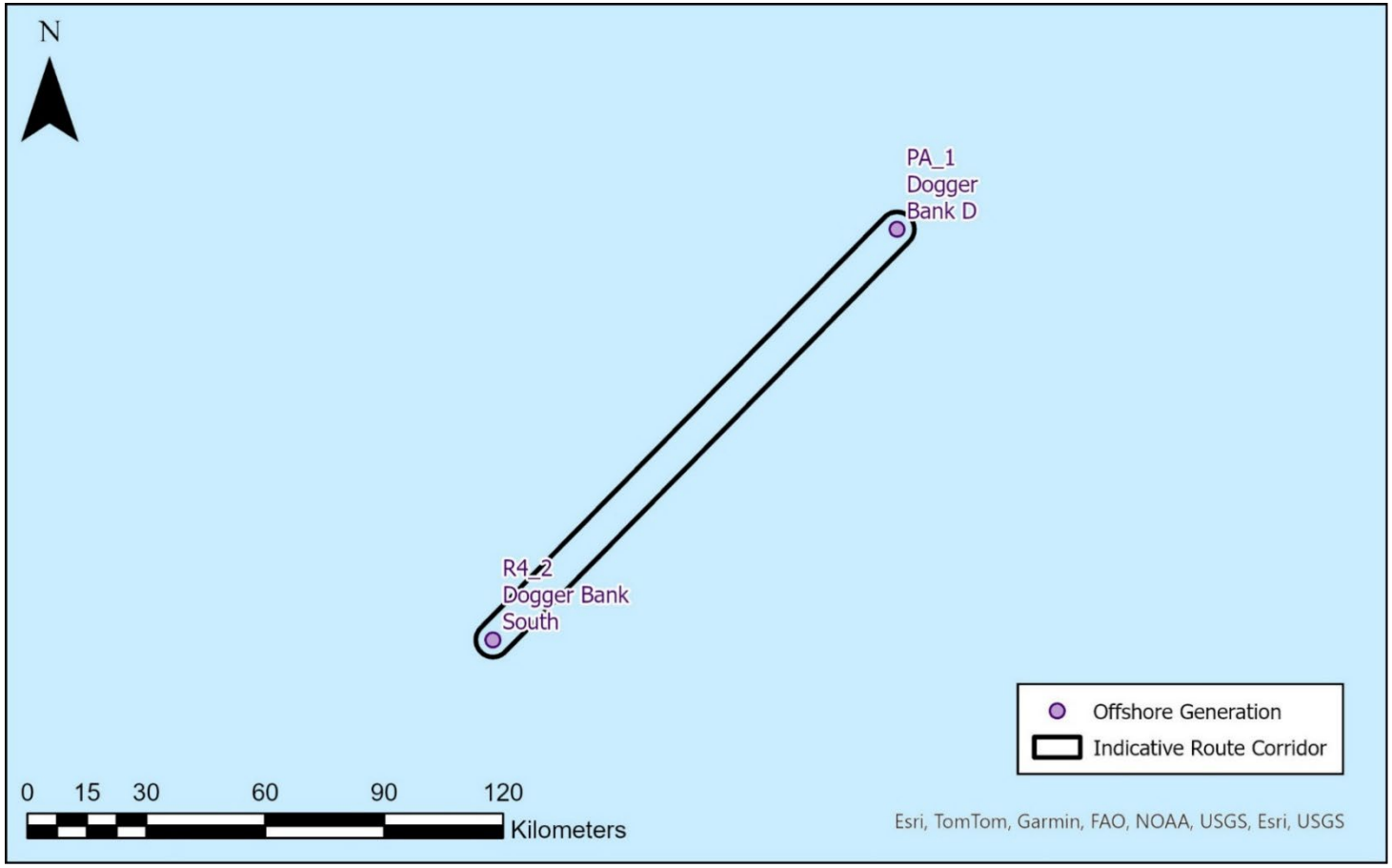
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided but the area affected can be minimised. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. The Durham Coast SAC (designated for vegetated sea cliffs) and Durham Coast SSSI are within the offshore route corridor and the route corridor at landfall. There is limited scope to avoid these and there is potential for direct and indirect within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, such as damage to habitats (-2). The Northumbria Coast SPA (designated for breeding little tern and arctic tern and migratory turnstone and sandpiper) and Ramsar site (designated for turnstone, sandpipers and beach) are within the offshore and landfall route corridor but can be avoided. The Eppleton Grassland SSSI (designated for grassland, meadow, scrub and woodland), Hawthorn Dene SSSI (designated for woodland and grassland), Hesledon Moor East SSSI (designated for grassland), Hesledon Moor West SSSI (designated for grassland) and Pig Hill SSSI (designated for grassland) are also within the onshore route corridor but are avoidable. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reefs within the offshore route corridor and landfall route corridor, which there is limited scope to avoid, and Annex I sandbanks offshore which cannot be avoided. There is potential for direct impacts and indirect impacts on these habitats during construction and decommissioning and cable maintenance activities, which may be long-term to permanent in nature in the footprint of infrastructure (-2). The Northumbria Coast IBA is within the route corridor offshore at landfall and there are areas of ancient woodland within the landfall and onshore route corridor, however these can be avoided by the cable route (-1).	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban areas of Seaham and Dawdon are within the route corridor at landfall, and the urban areas of Seaham, Dawdon, Murton, South Hetton, and Easington Lane are within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is also an RYA boating area within the offshore and landfall boating areas which has the potential to be avoided by the cable route. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the boating area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Hawthorn Quarry SSSI, and Stony Cut, Cold Hesledon SSSI can be avoided, avoiding the potential for direct impacts (-1). There are also Annex 1 reefs, Annex 1 Sandbank and the Durham Coast SSSI within the route corridor which cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these will need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided within the onshore corridor but cannot be avoided at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are dredge and spoil dumping sites offshore; however, there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (277.9 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as three offshore cables, eight offshore pipelines, the Staxton Military Area, one proposed offshore energy generation site (Dogger Bank C) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads and a railway line, which cannot be avoided, are located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (three oil/gas wells) onshore infrastructure (National Grid towers, overhead lines, cables and substations), one spoil dredge and spoil dumping site, the Dawdon Blast Beach Machine Gun Emplacement Area, Seaham Port and five urban areas (Seaham, Dawdon, Murton, South Hetton and Easington Lane) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 42 known wreck locations within the offshore route corridor. There are five listed buildings at landfall and 18 within the onshore route corridor, and there are also two Scheduled monuments within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The Durham Heritage Coast and Durham Coast National Trust lands are within the route corridor at landfall and the Durham Heritage Coast is also within the onshore route corridor, but these sensitive areas can be avoided, avoiding the potential for direct short-term landscape and visual impacts. The urban areas of Seaham and Dawdon are within the route corridor at landfall, and the urban areas of Seaham, Dawdon, Murton, South Hetton, and Easington Lane are within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There are multiple offshore cables overlapping this route. At landfall, there are other proposed cable routes such as, the HND routes into Creyke Beck, so these will need to be considered at the detailed design stage. The Dogger Bank SAC, landfall and the potential cumulative community effects of multiple new converter station proposals remain the principal constraints with the route.				

East England Region – EEIn9 – PA_1 to R4_2						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PA_1 Dogger Bank D	R4_2 Dogger Bank South East	83	660 - 1320	2 - 4 AC	2 - 4	N – HND1
Overview of Route						

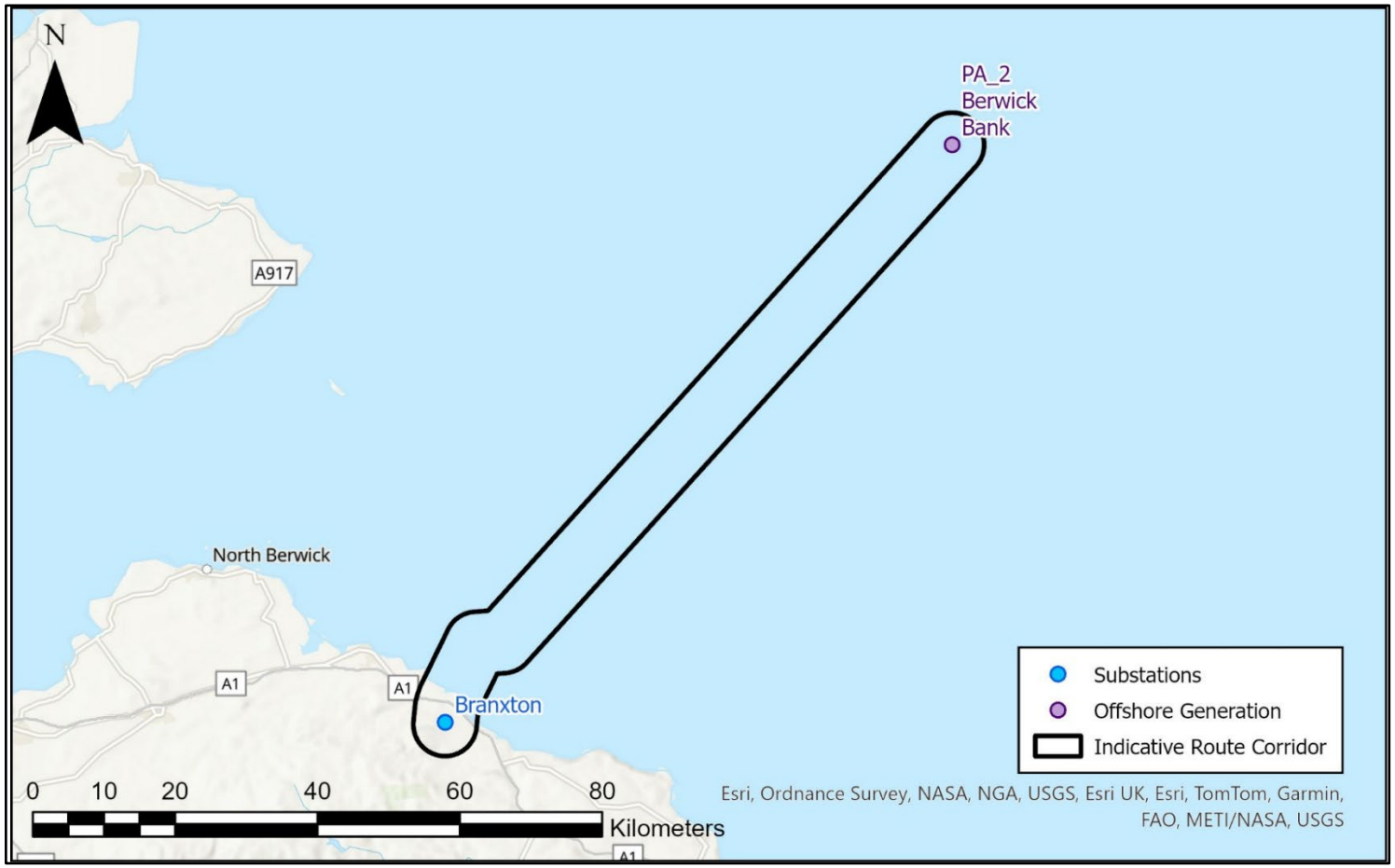


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided as both OWFs are located within the SAC. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. There are known locations of Annex I sandbank within the offshore route corridor, which cannot be avoided. There is potential for direct and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. However, there are Annex I sandbanks that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W)	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two offshore cables and areas of high-density fishing are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (four oil/gas wells) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+1	0/+1	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).				
Cultural, Architectural and Archaeological Heritage (CH) There is one known wreck location within the route corridor, which is located entirely offshore. This asset is avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect
Cumulative and in combination issues				
There are no identified cumulative and in combination constraints identified.				

East Scotland (SSE) Region – ESIn5 - PA_2 – Branxton						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PA_2 Berwick Bank	Branxton	61	1850 - 3600	4 - 12 AC	4 - 12	N – HND1
Overview of Route						



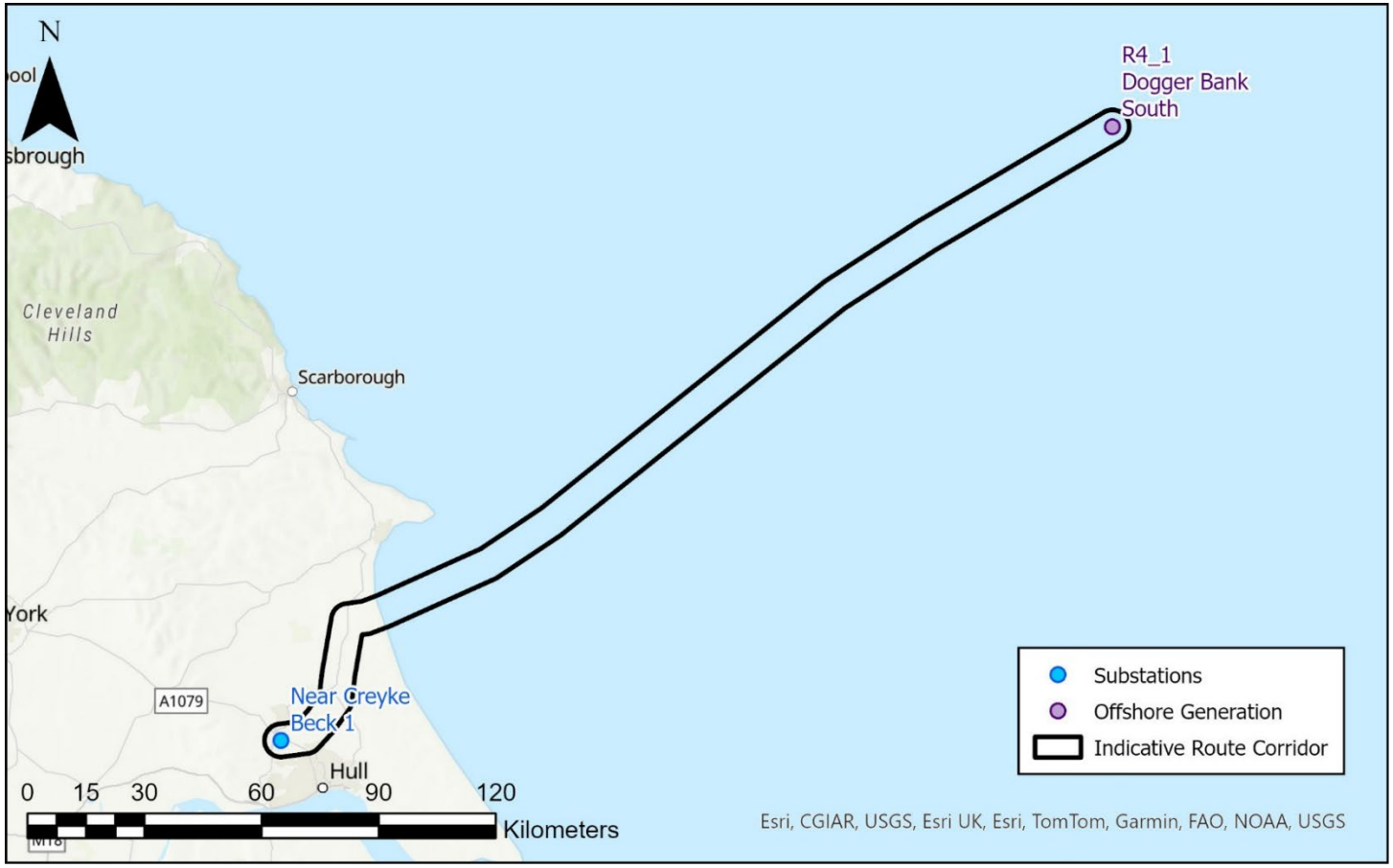
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species and damage to supporting habitat (-2). The Firth of Forth Banks Complex MPA (designated for sands and gravels and ocean quahog) is within the offshore route corridor and cannot be avoided, and there is potential for short-term direct and indirect impacts on protected habitats and species (-2). The Barns Ness Coast SSSI (designated for saltmarsh, sand dune and shingle habitats) is within the route corridor offshore and at landfall but can be avoided. The potential for indirect impacts on the protected features within this site should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that cannot be avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature in the footprint of infrastructure. There are known locations of ancient woodland within the landfall and onshore route corridor, however these can be avoided by the cable route. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) There is one bathing water site (Thorntonloch) within the offshore and landfall route corridors, however there is potential to avoid this area within the 5km route corridor. There is potential for short-term indirect negative impacts to surrounding populations such as noise and disturbance and water quality impacts to the bathing water site from disturbed sediments during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from the facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL)	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Barns Ness Coast SSSI, can be avoided, avoiding the potential for direct impacts (-1). However, there are also Annex 1 reefs and the Firth of Forth Banks Complex MPA that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily very good and good quality that could potentially be avoided (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these can be avoided at landfall and will need to be avoided or crossed within the onshore route; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as the Neart Na Gaoithe wind farm energy cable and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads, a railway line and onshore infrastructure (National Grid cables), which cannot be avoided, are located within the onshore portion of the 5km indicative route corridor. There is one proposed energy cable route (Eastern Link 1 Interconnector), and onshore infrastructure (National Grid towers, overhead lines and substations) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are six known wreck locations within the offshore route corridor and one within the route corridor at landfall, however, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There are three Scheduled monuments within route corridor at landfall and 17 within the onshore route corridor, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. The Dunglass Park and Garden is within the route corridor at landfall but can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term impacts on	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
the setting within this area during the construction and decommissioning phases, depending on proximity to the cable route. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the route corridor. There are also no urban areas or major settlements within the route corridor. In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).	-1	0	0	Direct
Cumulative and in combination issues				
There are no cumulative and in combination constraints identified.				

R4_1 – Near Creyke Beck						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_1 Dogger Bank South West	Near Creyke Beck	160	1500	4 AC	4	N – HND1
Overview of Route						



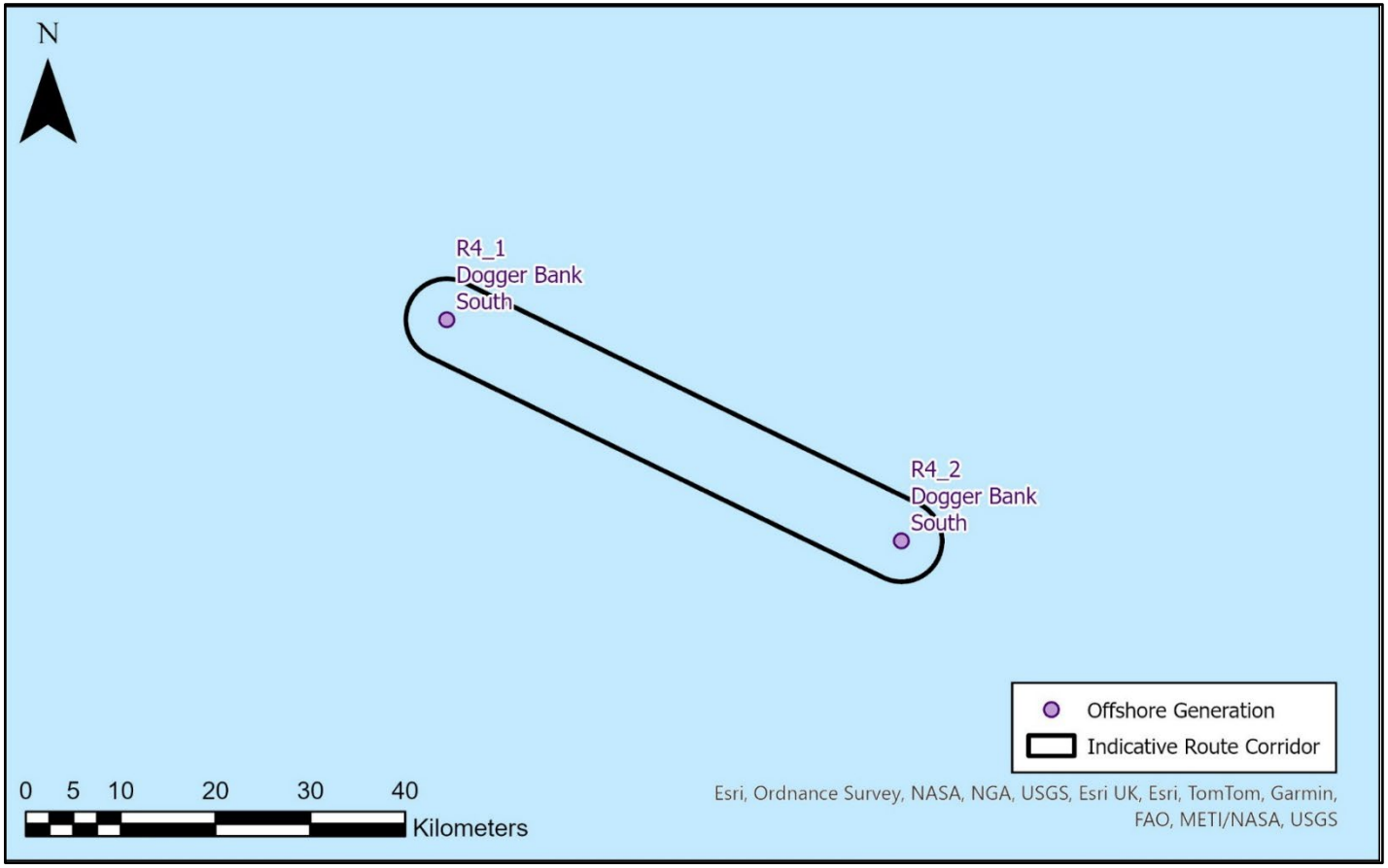
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided as the generation site is located within the SAC. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Holderness Offshore MCZ (designated subtidal coarse and mixed sediment, subtidal sand, North Sea glacial tunnel valleys and Ocean quahog) is within the offshore route corridor, the Holderness Inshore MCZ (designated for muds, sands, rock and coarse and mixed sediments) is within the offshore and landfall route corridor, and the Leven Canal SSSI is within the onshore route corridor; however, all of these sites are avoidable by the cable route; there is potential for short-term indirect impacts on protected features, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef and sandbank within the offshore route corridor and within the route corridor at landfall; Annex I sandbank cannot be completely avoided. There is potential for direct impacts on sandbank (-2) and indirect impacts on reef (-1) during construction and decommissioning and cable maintenance activities. There is an area of ancient woodland within the onshore route corridor, however this can be avoided by the cable route (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) There are urban areas throughout the onshore route corridor, including Beeford, Brandesburton, Leven, Beverly, Woodmansey, Kingswood and Cottingham; however, these areas can all be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is an RYA boating area which cannot be avoided and the Skipsea bathing waters which can be avoided by the cable route within the offshore and landfall route corridors. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the boating area (direct) and the bathing waters (indirect) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Annex 1 reefs, the Holderness Inshore MCZ, Holderness Offshore MCZ and Withow Gap, Skipsea SSSI can be avoided, avoiding the potential for direct impacts (-1). However, there are also Annex 1 sandbanks that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily very good and good quality that cannot be avoided (-2). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these will either need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided at landfall but cannot be avoided within the onshore corridor, therefore there is potential for increased flood risk that will need	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are areas benefiting from flood defences at landfall, however there is potential to avoid these, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 4 offshore pipelines, 2 proposed energy generation cables (Doggerbank A OFTO and Doggerbank B OFTO) and areas of high-density fishing are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads, a railway line and onshore infrastructure (two National Grid gas pipelines) are located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (4 oil/gas wells), a carbon capture and storage site agreement, 1 onshore military area, onshore infrastructure (National Grid towers and overhead line), 2 proposed energy generation cables (Hornsea Project 4 and Scotland-England Greenlink 2), and 7 urban areas (Beeford, Brandesburton, Leven, Beverly, Woodmansey, Kingswood and Cottingham) located within the 5km indicative	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 35 known wreck locations within the offshore route corridor, and 1 within the route corridor at landfall; however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is 1 Scheduled monument and 1 listed building within the route corridor at landfall, and 12 Scheduled monuments and 70 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified areas of landscape sensitivity within the route corridor. There are urban areas throughout the onshore route corridor, including Beeford, Brandesburton, Leven, Beverly, Woodmansey, Kingswood and Cottingham; however, these areas can all be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The offshore route overlaps multiple HND proposed routes. A significant proportion of R4_1 to Creyke Beck has common corridors with HND PA_1 to Creyke Beck and R4_2 to Creyke Beck. Within the route corridor there are scattered urban areas.				

East England Region – EEIn2 – R4_1 – R4_2						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_1 Dogger Bank South West	R4_2 Dogger Bank South East	31	750 - 1500	2 - 4 AC	2 - 4	N – HND1
Overview of Route						

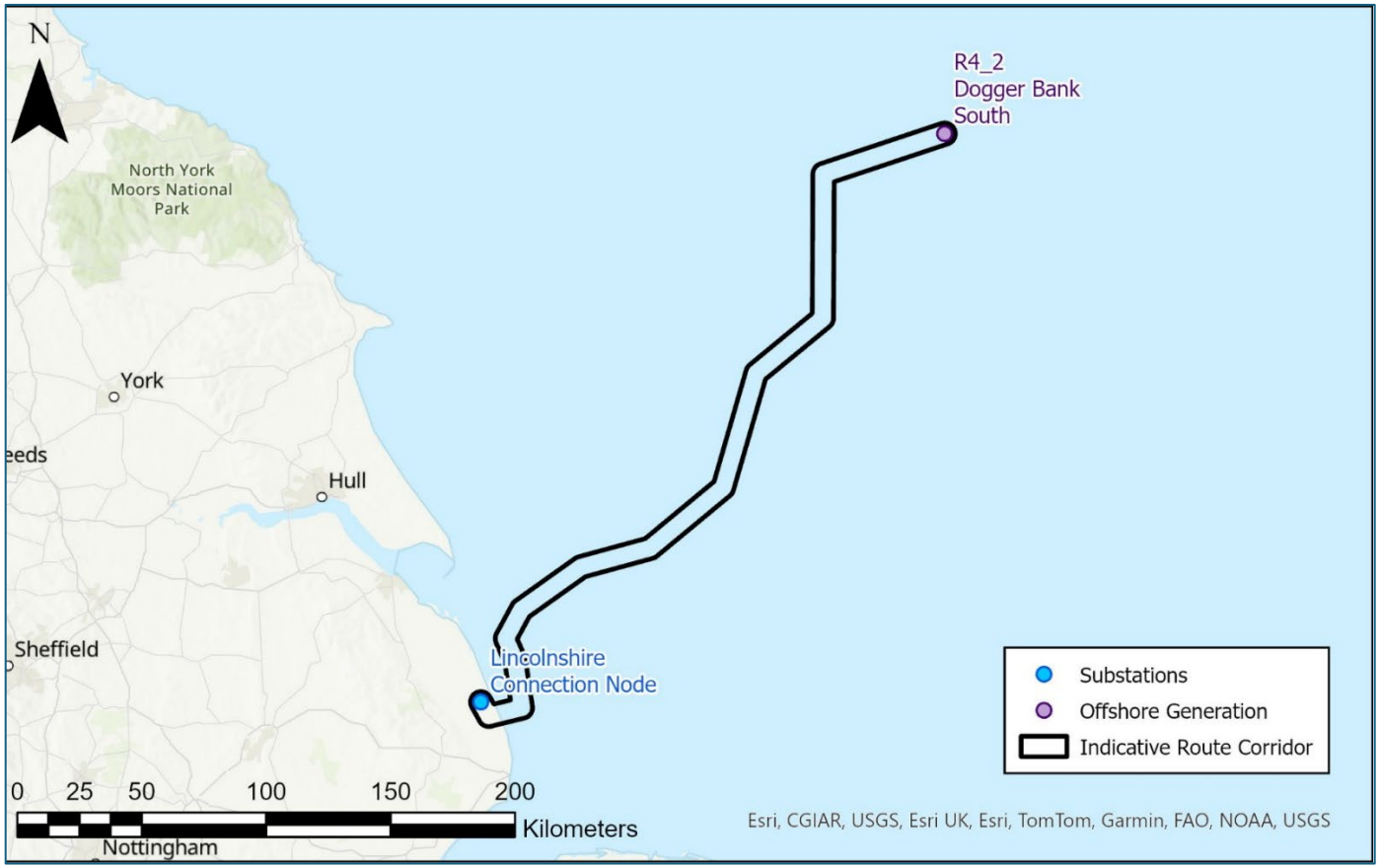


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided as the generation site is located within the SAC. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. There are known locations of Annex I sandbank within the route corridor, which cannot be avoided. There is potential for direct and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. However, there are Annex 1 sandbanks that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W)	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is offshore infrastructure (five oil/gas wells/diffusers and six pipelines) and high-density fishing areas located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cultural, Architectural and Archaeological Heritage (CH) There is one known wreck location within the route corridor, which is located entirely offshore. This asset is avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect
Cumulative and in combination issues				
There are no identified cumulative and in combination constraints identified, although interaction with turbine siting and inter-array cables will need to be considered at DND stage.				

East England Region – EE4c - R4_2 – Lincolnshire Connection Node						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_2 Dogger Bank South	Lincolnshire Connection Node	211	1500	2 HVDC	1	N – HND1
Overview of Route						



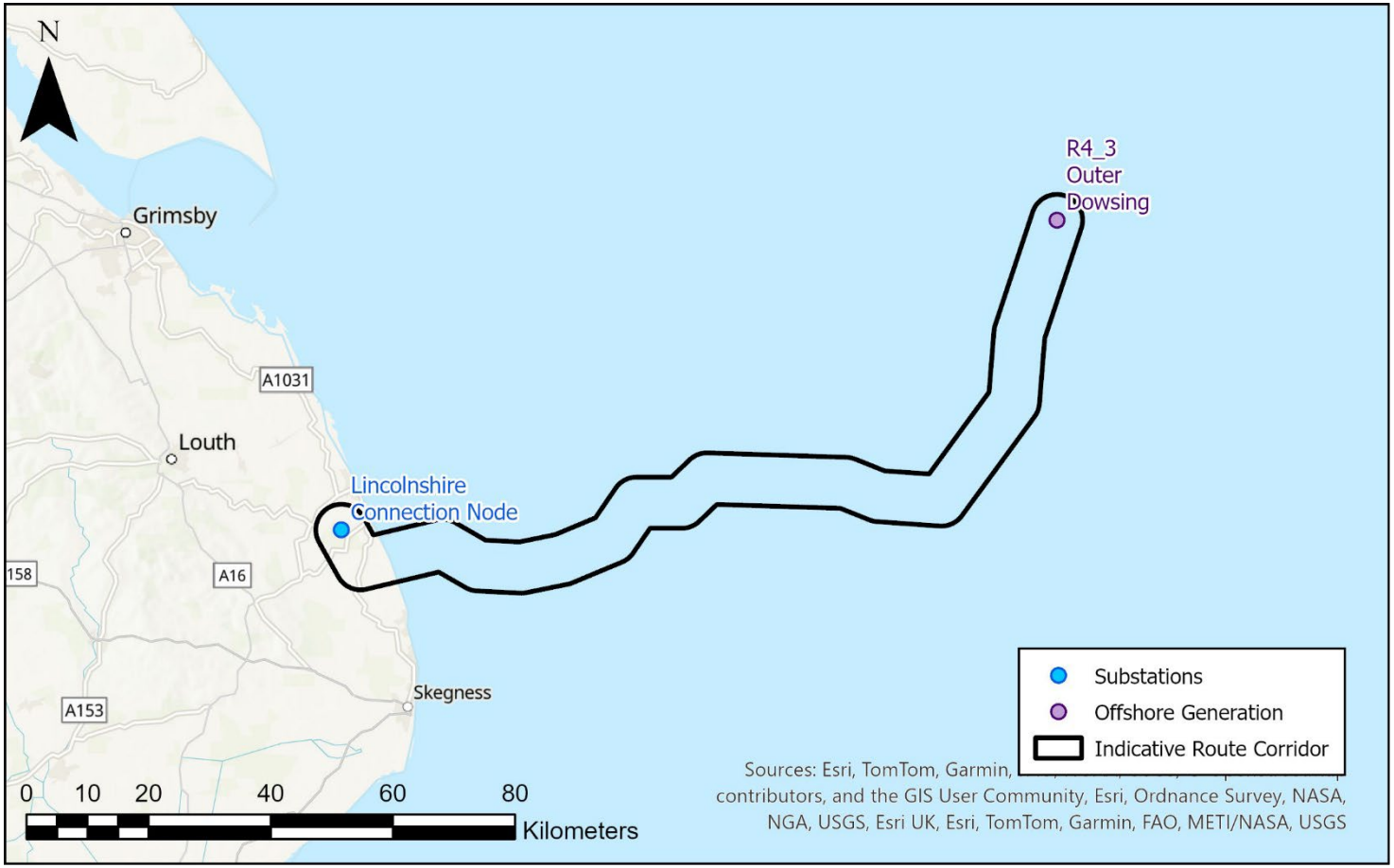
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided as the generation site is located within the SAC. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Holderness Offshore MCZ (designated subtidal coarse and mixed sediment, subtidal sand, North Sea glacial tunnel valleys and Ocean quahog) is within the offshore route corridor, and the Sea Bank Clay Pits SSSI (designated for wetland habitat) is within the landfall and onshore route corridor; however, all of these sites are avoidable by the cable route; there is potential for short-term indirect impacts on protected features, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef and sandbank within the offshore route corridor; Annex I sandbank cannot be completely avoided. There is potential for direct impacts on sandbank (-2) and indirect impacts on reef (-1) during construction and decommissioning and cable maintenance activities. There is an area of high density for grey seals offshore, which cannot be avoided, and there is potential for short-term direct and indirect impacts including disturbance and displacement during construction and decommissioning phases and during cable maintenance activities (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban area of Sandilands is within the route corridor at landfall and onshore, and the area of Sutton on Sea is also within the onshore route corridor. However, these areas can be avoided, avoiding the potential for significant direct effects (-1). There is an RYA boating area within the offshore and landfall route corridors which cannot be avoided and two bathing waters (Moggs Eye and Anderby) within the landfall route corridor which can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the boating area (direct) and bathing waters (indirect) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Annex 1 reefs, Holderness Offshore MCZ, the dredge and spoil dumping sites and Withow Gap, Skipsea SSSI can be avoided, avoiding the potential for direct impacts (-1). However, there are also Annex 1 sandbanks that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1), and the very good quality land can be avoided. There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (211.4 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as eight offshore cables, 31 offshore pipelines, three wind energy generation cables (Hornsea Project 1, Hornsea Project 2 and Triton Knoll), high-density shipping areas and areas of high-density fishing are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (71 oil/gas wells and eight gas/oil installations), an area of aggregate dredging, one dredge and spoil dumping site, one traffic separation scheme, one military area, one proposed offshore wind farm (Hornsea Project 4), and two urban areas (Sandilands and Sutton-on-Sea) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 44 known wreck locations within the offshore route corridor. There are also three Scheduled monuments and 17 listed buildings within the onshore route corridor. However, these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban area of Sandilands is within the route corridor at landfall and onshore, and the area of Sutton on Sea is also within the onshore route corridor. However, these areas can be avoided, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The offshore approach is spatially constrained due to a small gap of 10km for all connections to pass through with other existing cables. There are also cable crossings for HND1 routes required in waters less than 10m in depth. The route shares a landfall and onshore approach with R4_3 to Lincolnshire Connection Node. In relation to routes offshore, the route crosses PA_1 to Creyke Beck and R4_2 to Creyke Beck.				

East England Region – EE5d - R4_3 – Lincolnshire Connection Node						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_3 Outer Dowsing	Lincolnshire Connection Node	95	1500	4 AC	4	N – HND1
Overview of Route						



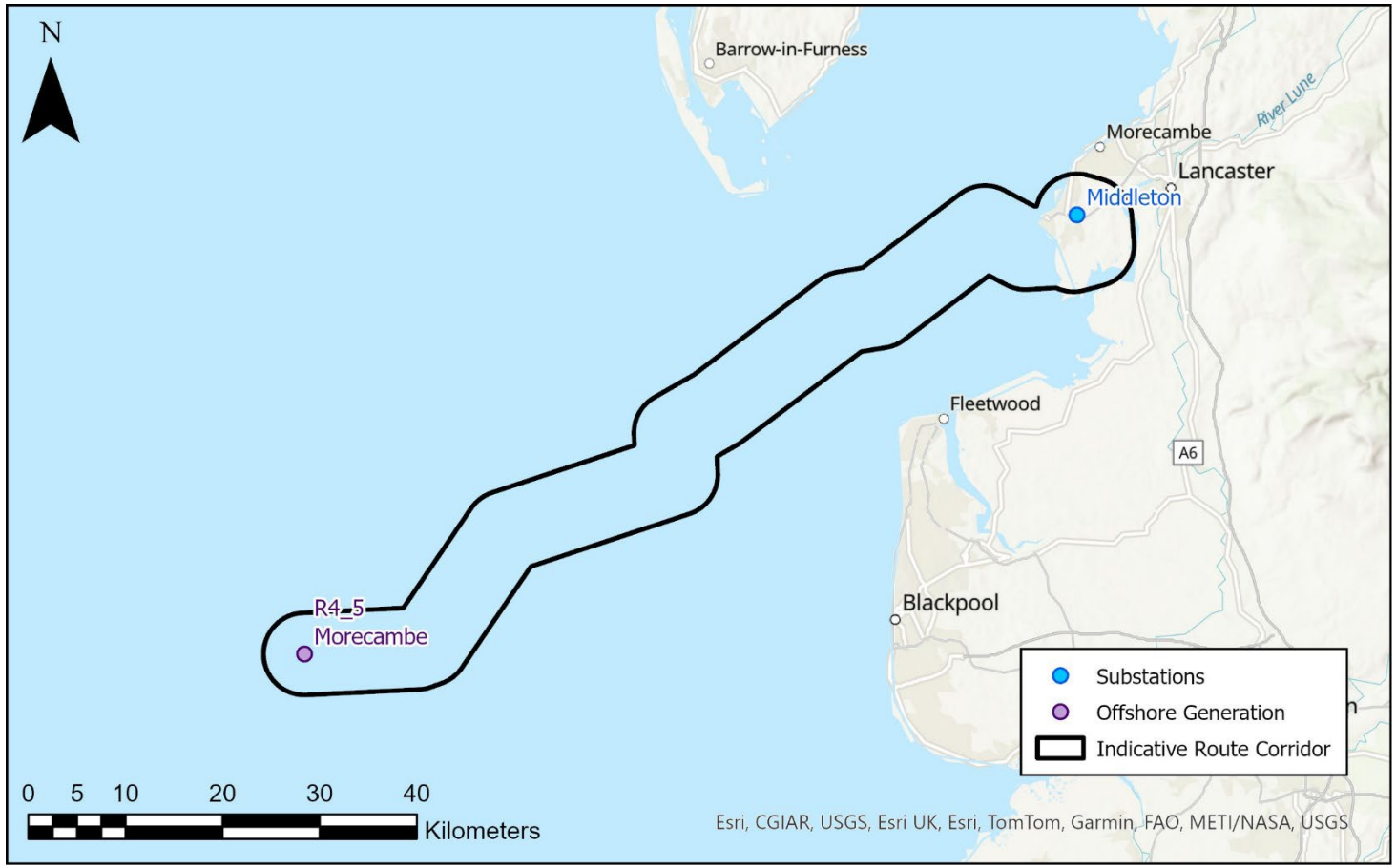
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Inner Dowsing, Race Bank and North Ridge SAC (designated for sandbank) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats sensitive to cabling activities (-3). The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Sea Bank Clay Pits SSSI (designated for wetland habitat) is within the landfall and onshore route corridor but can be avoided by the cable route; there is potential for short-term indirect impacts on protected features, which should be considered at the detailed design stage (-1). There are known locations of Annex I sandbank within the offshore route corridor, which cannot be avoided. There is potential for direct and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban area of Sandilands is within the route corridor at landfall and onshore, and the area of Sutton on Sea is also within the onshore route corridor. However, these areas can be avoided, avoiding the potential for significant direct effects (-1). There is an RYA boating area within the offshore and landfall route corridors which cannot be avoided and two bathing waters (Moggs Eye and Anderby) within the landfall route corridor which can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the boating area (direct) and bathing waters (indirect) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites which can be avoided, avoiding the potential for direct impacts (-1). There are also Annex 1 sandbanks, but these cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1), and the very good quality land can be avoided. There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is a dredge and spoil dumping site offshore, however there is potential to avoid this within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF)	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as seven offshore cables, five offshore pipelines, one wind energy generation cables (Triton Knoll), high-density shipping areas and areas of high-density fishing are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (12 oil/gas wells and two gas/oil installations), areas of aggregate dredging, one dredge and spoil dumping site, one military area, one existing offshore wind farm (Race Bank wind farm) and two urban areas (Sandilands and Sutton-on-Sea) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 33 known wreck locations within the offshore route corridor. There are also three Scheduled monuments and 17 listed buildings within the onshore route corridor. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban area of Sandilands is within the route corridor at landfall and onshore, and the area of Sutton on Sea is also within the onshore route corridor. However, these areas can be avoided, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route shares a landfall and onshore approach with R4_2 to Lincolnshire Connection Node				

R4_5 – Middleton						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_5 Morecambe	Middleton	61	480	3 AC	2	N – HND1
Overview of Route						



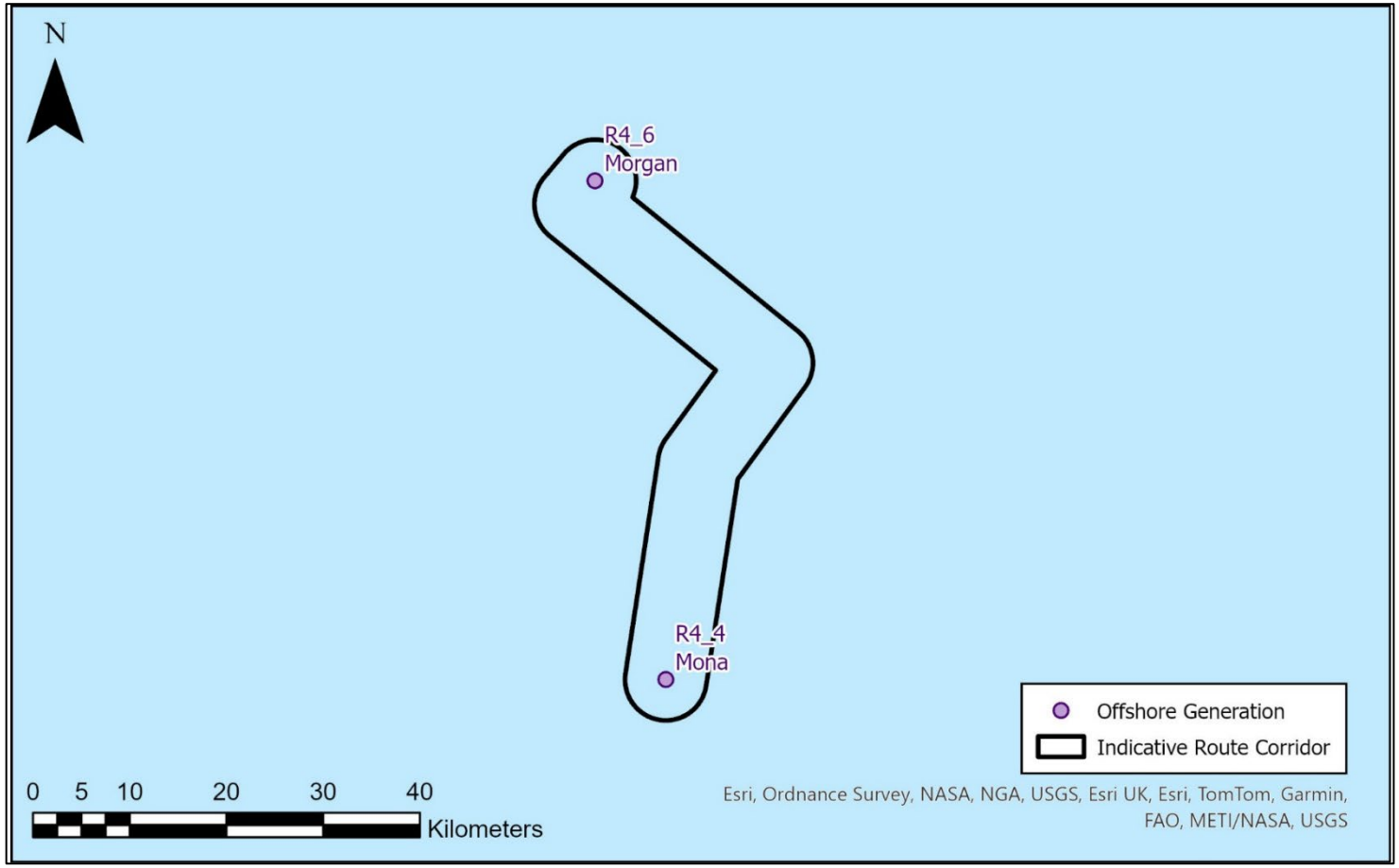
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Morecambe Bay SAC (designated for sand dunes and marine areas and sea inlets) is within offshore, landfall and onshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats sensitive to cabling (-3). The Liverpool Bay SPA (designated for bird species including red-throated diver, little gull, common scoter, little tern and common tern) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of birds (-2). Avoidance of sensitive times or specific areas used by red-throated divers should be considered at the detailed design stage. The Morecambe Bay and Duddon Estuary SPA (designated for breeding and non-breeding birds), Wyre-Lune MCZ (designated for smelt), and Morecambe Bay Ramsar site (designated for breeding birds and wintering wildfowl) are within the route corridor at landfall with limited potential for avoidance owing to the technical constraints associated with alternative routing through Heysham Port). There is potential for short-term direct and indirect impacts on protected features, including disturbance and displacement of species and damage to supporting habitats (-2). There are also several designated sites that are avoidable within the route corridor. These include the Shell Flat and Lune Deep SAC (designated for marine areas and sea inlets, reef and sandbank) and Wyre-Lune MCZ within the offshore route corridor, the Morecambe Bay and Duddon Estuary SPA, Morecambe Bay Ramsar, and Lune Estuary SSSI within the onshore route corridor, and the Morecambe Bay SSSI within the landfall route corridor. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef, sandbank and saltmarsh within the offshore route corridor and areas of reef and sandbank within the route corridor at landfall; Annex I reef and sandbank within the offshore route corridor cannot be completely avoided. Therefore, there is potential for direct and indirect impacts on offshore reef and sandbank (-2) and indirect impacts on saltmarsh (-1) during construction and decommissioning and cable maintenance activities. The Morecambe Bay IBA is within the offshore and landfall route corridor and is unlikely to be avoidable at landfall. The potential for short-term impacts on birds and supporting habitats during the construction and decommissioning phases and during cable maintenance activities, should be considered at the detailed design stage (-1).	-3	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) There are urban areas around Heysham within the route corridor at landfall and onshore and the settlement of Overton is also within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is also an RYA boating area within the offshore and landfall route options which cannot be avoided by the cable route. There is potential for short-term, negative effects on the local population, such as noise and disturbance and direct water quality impacts to the boating area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites which can be avoided, avoiding the potential for direct impacts (-1). However, there are also Annex 1 reefs and Annex 1 sandbanks that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good to moderate quality (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these will either need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore and	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
areas benefitting from defences onshore, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the offshore route corridor, however these can be avoided (-1). There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 21 offshore cables and areas of high-density shipping are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (oil/gas wells, the Morecambe DP3 gas installation and one pipeline), Heysham Port, three designated anchorage areas, a navigational dredging area, urban areas surrounding Heysham, and a railway line located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).				
Cultural, Architectural and Archaeological Heritage (CH) There are eight known wreck locations within the offshore route corridor and two within the route corridor at landfall, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There are also 31 listed buildings within the route corridor at landfall and 45 within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is an area of National Trust land within the landfall and onshore route corridor; however, this area can be avoided by the cable route, avoiding the potential for short-term direct visual impacts within this sensitive landscape area (-1). There are urban areas around Heysham within the route corridor at landfall and onshore and the settlement of Overton is also within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
Overall, the offshore approach from R4_5 (Morecambe) to Middleton is moderately constrained. The onshore approach is lightly to moderately constrained, however most of these constraints can be avoided or mitigated for. The Interaction with another substation called Heysham may cause some in combination constraints. The principal risks and/or potential environmental and community effects of consenting and installing cables within this corridor relate to the acceptability and potential cumulative environmental effects of further cable installation within the Morecambe Bay SAC, although in this case only one or two more submarine cables would require installation for R4_5. Suitable construction methods and/or mitigation would also need to be identified for the other designated sites within the route corridor.				

NWIn5 - R4_6 - R4_4						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_6 Morgan	R4_4 Mona	38	2000	4 AC	4	N – HND1
Overview of Route						

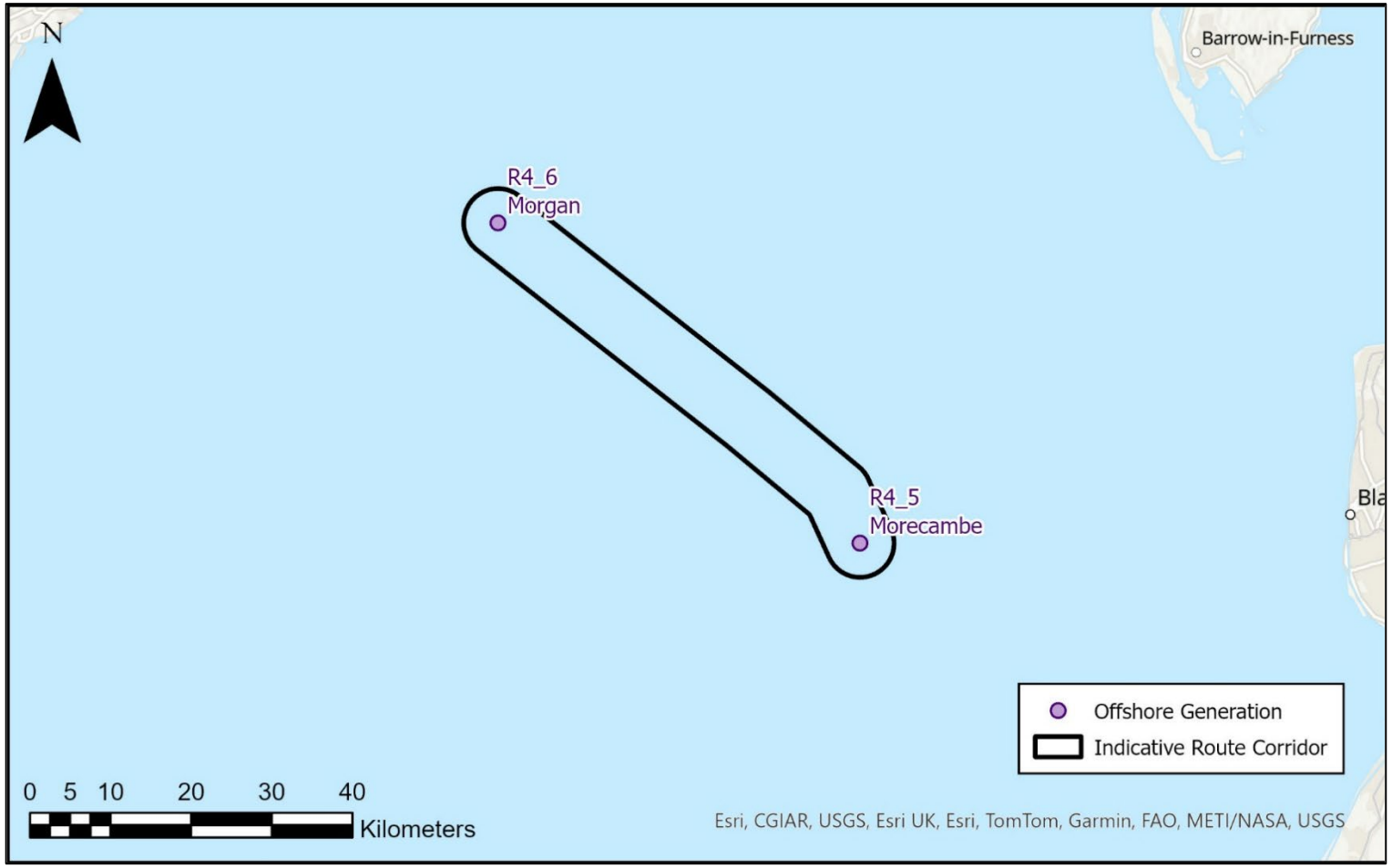


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites within the route corridor, which is located entirely offshore. There is a small known area of Annex I reef within the route corridor; however, this can be avoided. The potential for indirect impacts on this habitat during construction and decommissioning and cable maintenance activities should be considered at the detailed design stage (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor, which is located entirely offshore. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There are Annex 1 reefs offshore which can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 14 offshore cables are located within the 5km indicative route corridor and cannot be avoided. There are high-density fishing areas located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are two known wreck locations within the route corridor, which is located entirely offshore. These assets are avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L)	-1	0	0	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
There are no identified cumulative and in combination constraints identified, although interaction with turbine siting and inter-array cables will need to be considered at DND stage.				

NWIn6 - R4_6 - R4_5						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
R4_6 Morgan	R4_5 Morecambe	35	2000	4 AC	4	N – HND1
Overview of Route						

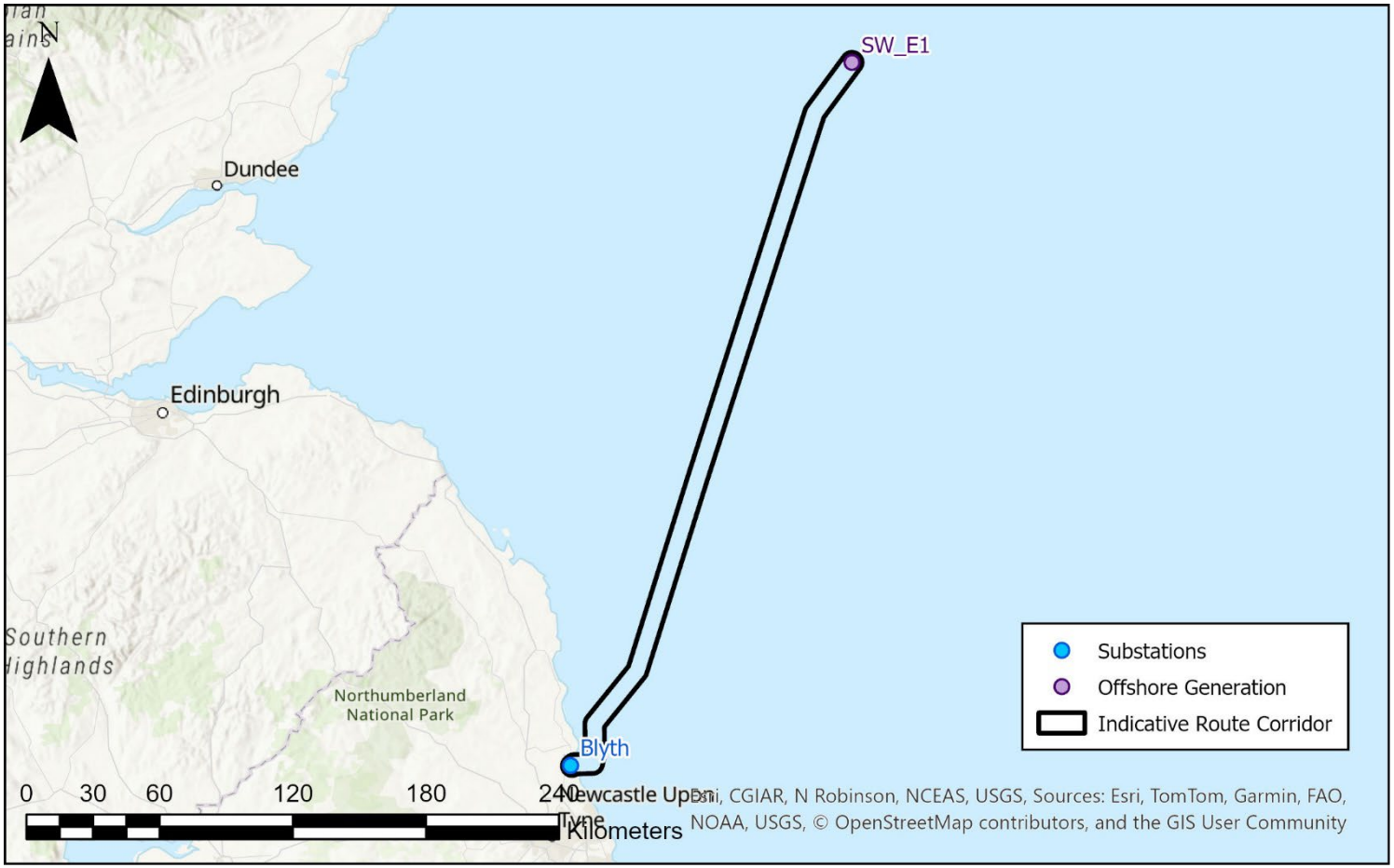


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites within the route corridor, which is located entirely offshore. There is a small known area of Annex I reef within the route corridor; however, this can be avoided. The potential for indirect impacts on this habitat during construction and decommissioning and cable maintenance activities should be considered at the detailed design stage (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor, which is located entirely offshore. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There are Annex 1 reefs offshore which can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as three offshore cables, three pipelines and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There are high-density fishing areas, offshore infrastructure (six pipelines and 11 oil/gas wells) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are three known wreck locations within the route corridor, which is located entirely offshore. These assets are all avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L)	-1	0	0	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
There are no cumulative and in combination constraints identified.				

East England Region – EE16 – SW_E1 – Blyth						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1 (EA1)	Blyth	196	1500	4 AC	4	N – HND1
Overview of Route						



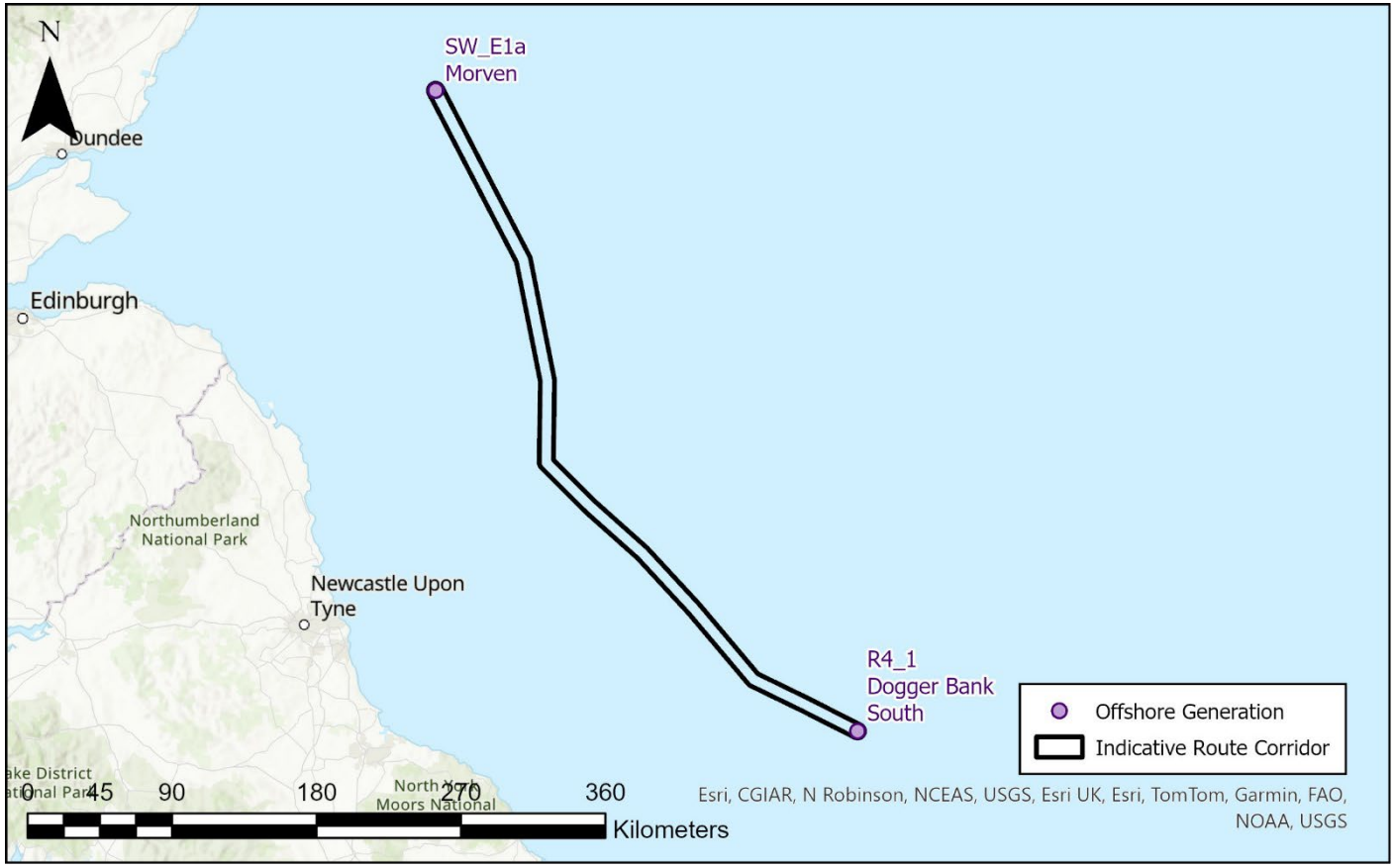
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Berwick to St Mary's MCZ (designated for common eider), Coquet to St Marys MCZ (designated for rock and sediment communities on the shoreline and on the seabed), Northumberland Marine SPA (designated for breeding tern species and migratory species such as puffin and guillemot), Farnes East MCZ (designated for subtidal sediments, circalittoral rock, sea-pen communities and ocean quahog), and Northumberland Shore SSSI (designated for purple sandpiper, turnstone, sanderling, golden plover, ringed plover, and redshank) are within the offshore route corridor and cannot be avoided. The Berwick to St Mary's MCZ and Coquet to St Marys MCZ are also unavoidable at landfall, and the Northumberland Marine SPA and Northumberland Shore SSSI are also unavoidable at landfall and onshore. There is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of bird species or damage to habitats (-2/-3). The Northumbria Coast SPA (designated for breeding little tern and arctic tern and migratory turnstone and sandpiper), Northumbria Coast Ramsar site are within the offshore route corridor but can be avoided by the cable route, avoiding the potential for direct impacts. The Northumbria Coast SPA and Ramsar are also avoidable at landfall, and the Northumbria Coast IBA is avoidable offshore and at landfall. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the route corridor at landfall, with limited scope to avoid them. There is potential for both direct and indirect impacts on this habitat during construction, decommissioning, and cable maintenance activities, which may be long-term or permanent in nature within the footprint of the infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Blyth is within the route corridor at landfall and onshore and the urban area of Bedlington is also within the onshore route corridor, but can be avoided, avoiding the potential for significant direct effects (-1). There is also an RYA boating area within the offshore and landfall route corridors which can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
water quality impacts to the boating area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites and the Cresswell and Newbiggin Shores SSSI which can be avoided, avoiding the potential for direct impacts (-1). There are also Annex 1 reefs (-2), the Coquet to St Marys MCZ (-3) and the Farnes East MCZ (-2) that cannot be avoided. Therefore, there is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The area is primarily urban and good quality land (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-3	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these will need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided within the onshore corridor, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as six offshore cables, a military firing danger area and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads and a railway line, which cannot be avoided, are located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (one oil/gas well and one diffuser), one dredge and spoil dumping site, one navigation dredging area, three wind energy generation sites (Blyth wind farm phases one, two and three), the Noah Met Mast, high-density shipping areas, the Port of Blyth, onshore infrastructure (National Grid towers, overhead lines, cables and substations) and two urban areas (Blyth and Bedlington) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 22 known wreck locations within the offshore route corridor. There are 15 listed buildings within the route corridor at landfall and 24 within the onshore route corridor. However, all these assets can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). In general, there is also potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban area of Blyth is within the route corridor at landfall and onshore and the urban area of Bedlington is also within the onshore route corridor, but can be avoided, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The offshore route overlaps with multiple proposed cable routes and the landfall area overlaps with HND PA_2 and HNDFUE SW_E1c_2 connections to Blyth so this will need to be considered at the detailed design stage.				

East England Region – EEIn3 – SW_E1a to R4_1						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a Morven	R4_1	286	1800	2 HVDC	1	N – HND1
Overview of Route						

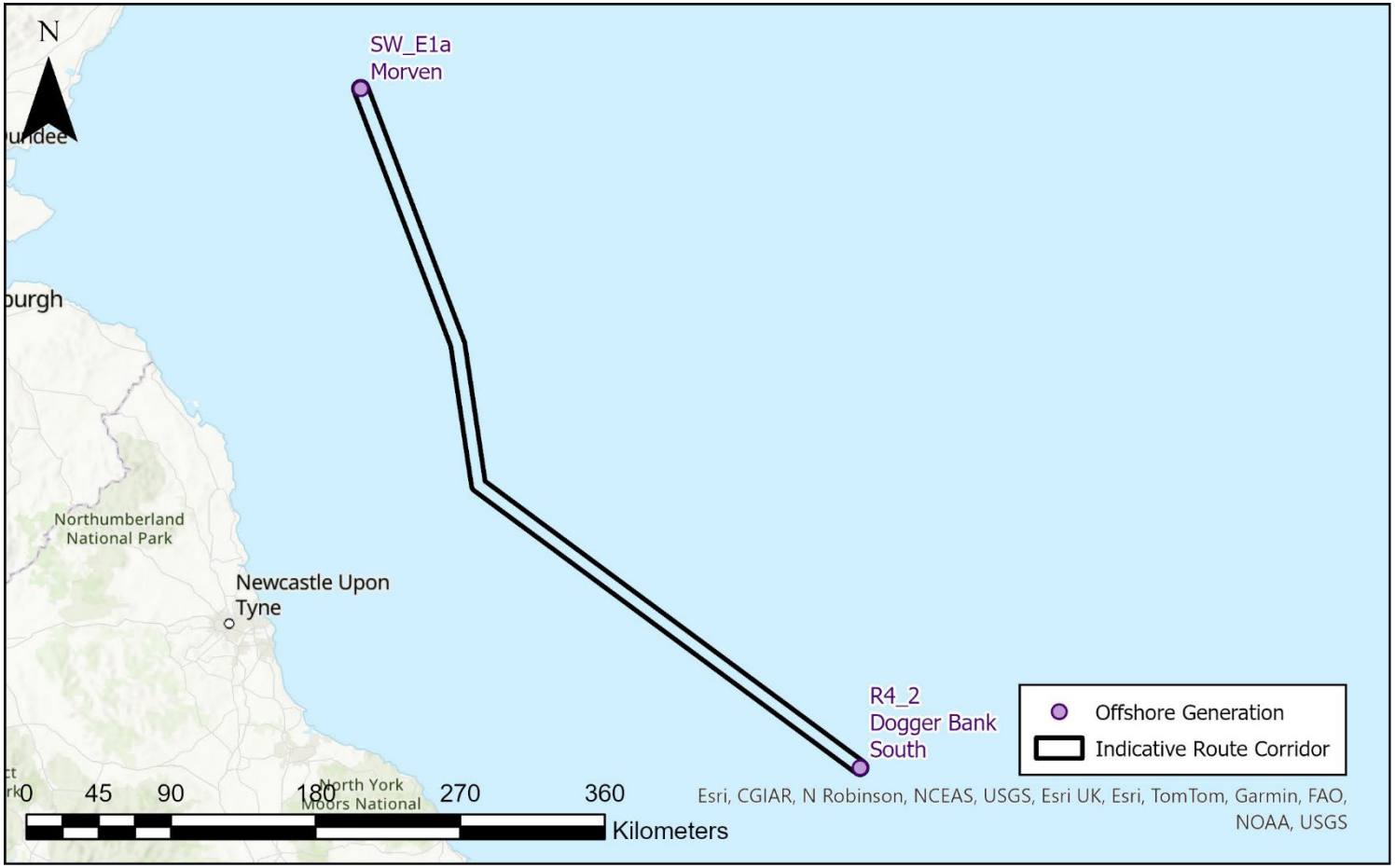


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided as the generation site is located within the SAC. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. There are known locations of Annex I sandbank within the route corridor, which cannot be avoided. There is potential for direct and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. However, there are Annex 1 sandbanks that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W)	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (286.7 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 12 offshore cables, 13 offshore pipelines, two military areas (Staxton and Druridge Bay) and areas of high-density fishing are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (five oil/gas wells and two oil/gas installations) and four proposed wind energy generation cables (Doggerbank A OFTO, Doggerbank B OFTO, Doggerbank C OFTO and Sofia (Teeside B)) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the	-2	0/+2	0/+2	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 20 known wreck locations within the route corridor, which is located entirely offshore. These assets are avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect
Cumulative and in combination issues				
There are no identified cumulative and in combination constraints identified, although interaction with turbine siting and inter-array cables will need to be considered at DND stage.				

East England Region – EEIn19 – SW_E1a to R4_2						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a Morven	R4_2	314	1800	2 DC	1	N – HND1
Overview of Route						

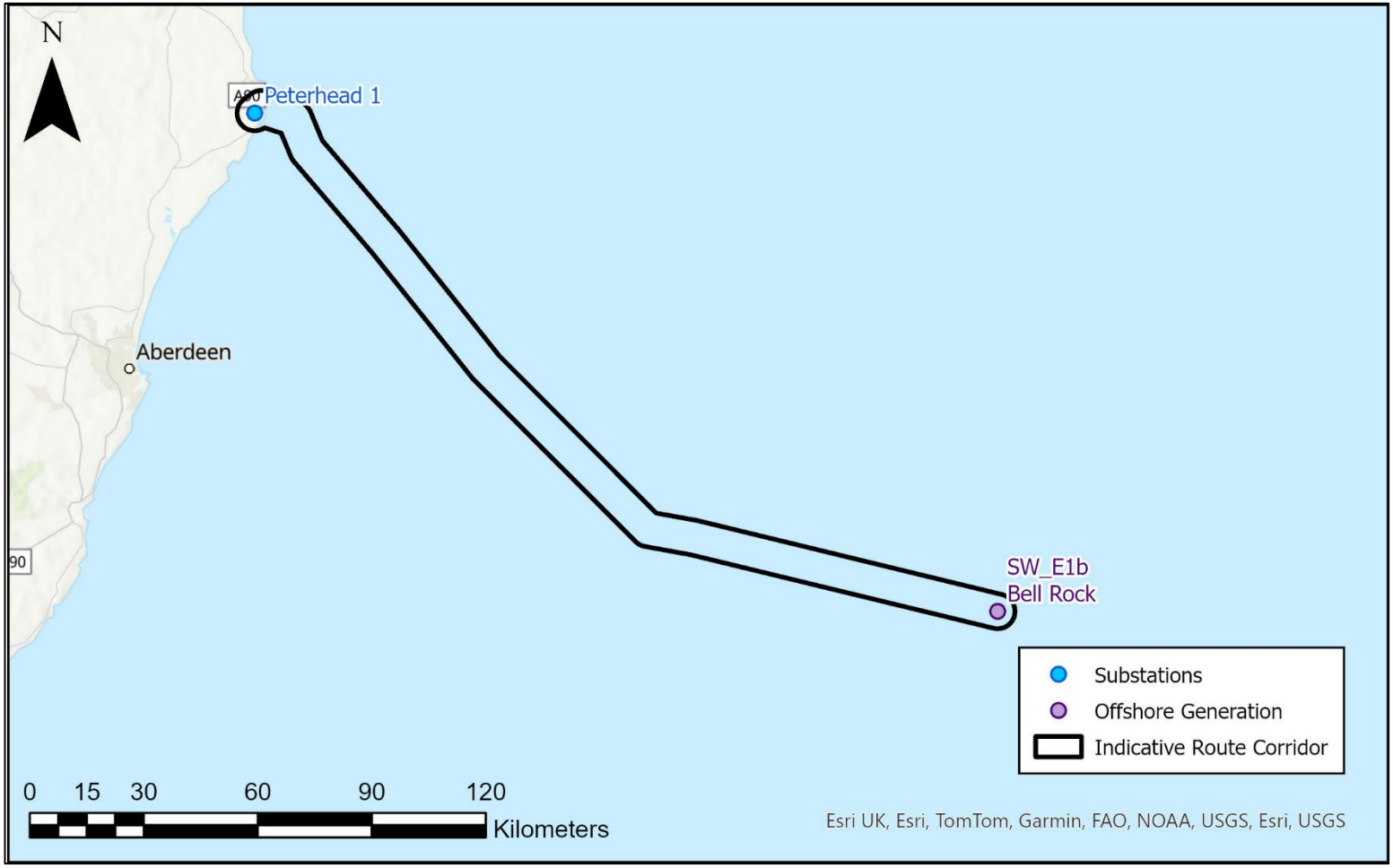


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Dogger Bank SAC (designated for sublittoral sandbank habitat) is within the offshore route corridor and cannot be avoided as the generation site is located within the SAC. There is potential for short-term direct and indirect damage to habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. There are known locations of Annex I sandbank within the route corridor, which cannot be avoided. There is potential for direct and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. However, there are Annex 1 sandbanks which cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W)	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (314.5 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 12 offshore cables, 13 offshore pipelines, two military areas (Staxton and Druridge Bay) and areas of high-density fishing are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (five oil/gas wells) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+2	0/+2	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 11 known wreck locations within the route corridor, which is located entirely offshore. These assets are avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect
Cumulative and in combination issues				
There are no identified cumulative and in combination constraints identified, although interaction with turbine siting and inter-array cables will need to be considered at DND stage.				

East Scotland (SSE) Region – ES29 - SW_E1b – Peterhead1						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1b Bell Rock	Peterhead1	135	1200	3	3	N – HND1
Overview of Route						



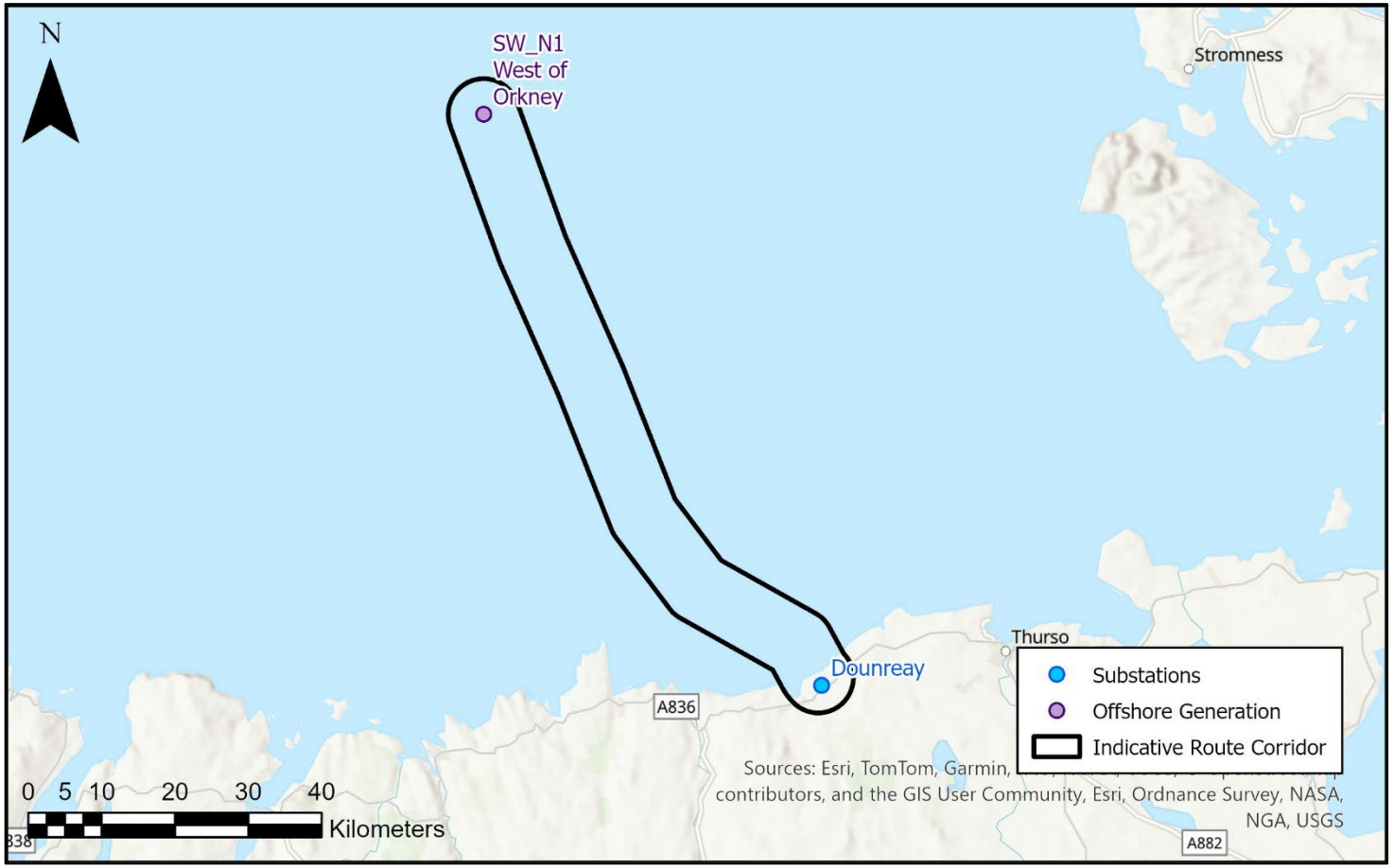
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Buchan Ness to Collieston SPA (designated for seabirds, including black-legged kittiwake, common guillemot, herring gull, European shag and northern fulmar) is within the offshore and landfall route corridor and cannot be avoided at landfall. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species and damage to supporting habitats (-2). The Buchan Ness to Collieston Coast SAC (designated for vegetated cliff habitat) and the Bullers of Buchan Coast SSSI are within the offshore and landfall route corridor but can be avoided by the cable route. The Buchan Ness to Collieston Coast IBA is also within the route corridor offshore and at landfall and can be avoided. The potential for indirect impacts on site features will need to be considered at the project stage (-1). There are known locations of Annex I reef within the offshore route corridor, however these can be avoided by the cable route. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities, depending on proximity (-1). There is an area of high seabird density offshore that can also be avoided. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban areas of Boddam and Peterhead are within the route corridor at landfall and onshore but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). The Peterhead (Lido) bathing water site is also located within the offshore and landfall route corridors; however, this area can be avoided by the cable route. There is potential for short-term, negative effects on the local population, such as noise and disturbance, and indirect water quality impacts to the bathing waters during the construction and decommissioning phases, and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites, Annex 1 reefs, the Bullers of Buchan Coast SSSI and the offshore Buchan Ness to Collieston MPA, which can be avoided, avoiding the potential for direct impacts (-1). There is also the Buchan Ness to Collieston MPA at landfall that cannot be avoided (-2), therefore, there is potential for short-term	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these will either need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided at landfall but cannot be avoided within the onshore corridor, therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is a dredge and spoil dumping site offshore; however, there is potential to avoid this within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two offshore cables, two offshore pipelines, high-density shipping areas, two proposed energy cables (North Connect and Eastern Link 2) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads which cannot be avoided are located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (two proposed HDVC links), one navigation dredging area, Peterhead Port, the Peterhead Bay Marina and two urban areas (Boddam and Peterhead) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 14 known wreck locations within the offshore route corridor and eight within the route corridor at landfall; however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There are two Scheduled monuments and one listed building within the route corridor at landfall and two Scheduled monuments and one listed building within the onshore route corridor. However, these assets can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The urban areas of Boddam and Peterhead are within the route corridor at landfall and onshore but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There are no cumulative and in combination impacts identified.				

North Scotland Region – NS1 - SW_N1 – Dounreay						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_N1 West of Orkney	Dounreay	48	2000	4 - 6 AC	6	N – HND1
Overview of Route						

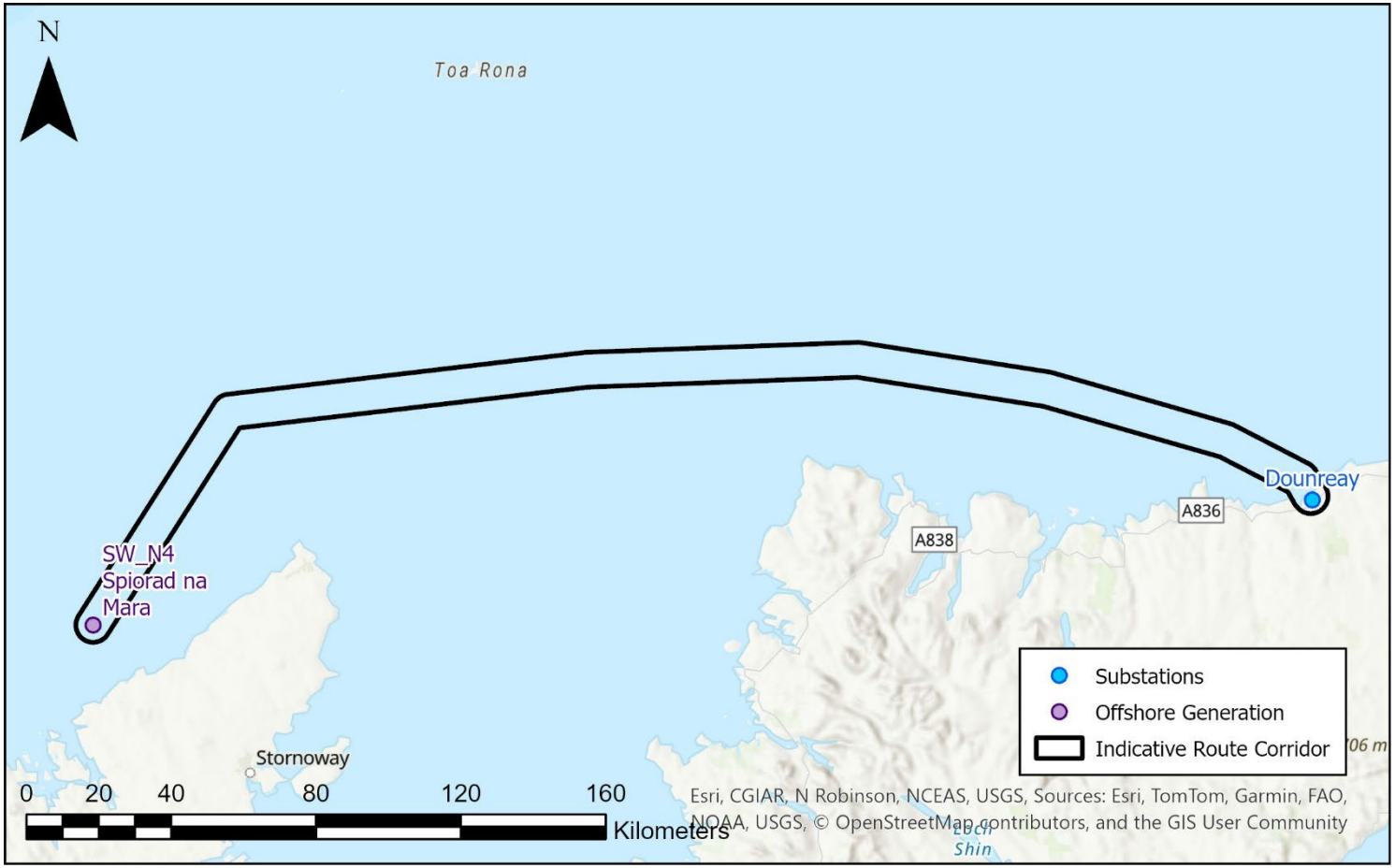


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) and the Sandside Bay SSSI (designated for dune habitat) are within the offshore, landfall and onshore route corridor, but can be avoided. There may be potential for short-term indirect impacts on the designated features of these sites during the construction and decommissioning phases and during cable maintenance activities, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, however these can be avoided; the potential for short-term indirect impacts on this habitat should be considered at the detailed design stage (-1). The Caithness Cliffs IBA is within the offshore, landfall, and onshore route corridor but can be avoided; there may be potential for short-term indirect effects within this area (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) The settlement of Dounreay is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Annex 1 reefs and the Red Point Coast SSSI within the route corridor can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.	-1	0	0	Direct & Indirect
Water (W)	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two proposed offshore energy generation cables (Highland Wind Ltd wind farm and Orkney Transmission Connection Project) are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads which cannot be avoided are located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (one	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
oil/gas well/diffuser), two offshore energy generation sites (the existing Dounreay Tri wind farm and the proposed Highland Wind Ltd wind farm), high-density fishing areas and the Dounreay urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are four known wreck locations within the offshore route corridor and one within the route corridor at landfall. There are also three Scheduled monuments within the route corridor at landfall. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The settlement of Dounreay is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
This route overlaps with HND SW_N4 connections to Dounreay... There could also be competition at Sandside Bay with the proposed Orkney-Dounreay link and the Highland Wind demo site cabling, although these projects are understood to be landfalling east of Sandside Bay which should avoid any conflict.				

North Scotland Region – NS4 - SW_N4 – Dounreay						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_N4 Spiorad na Mara	Dounreay	196	1000	3 AC	3	N – HND1
Overview of Route						



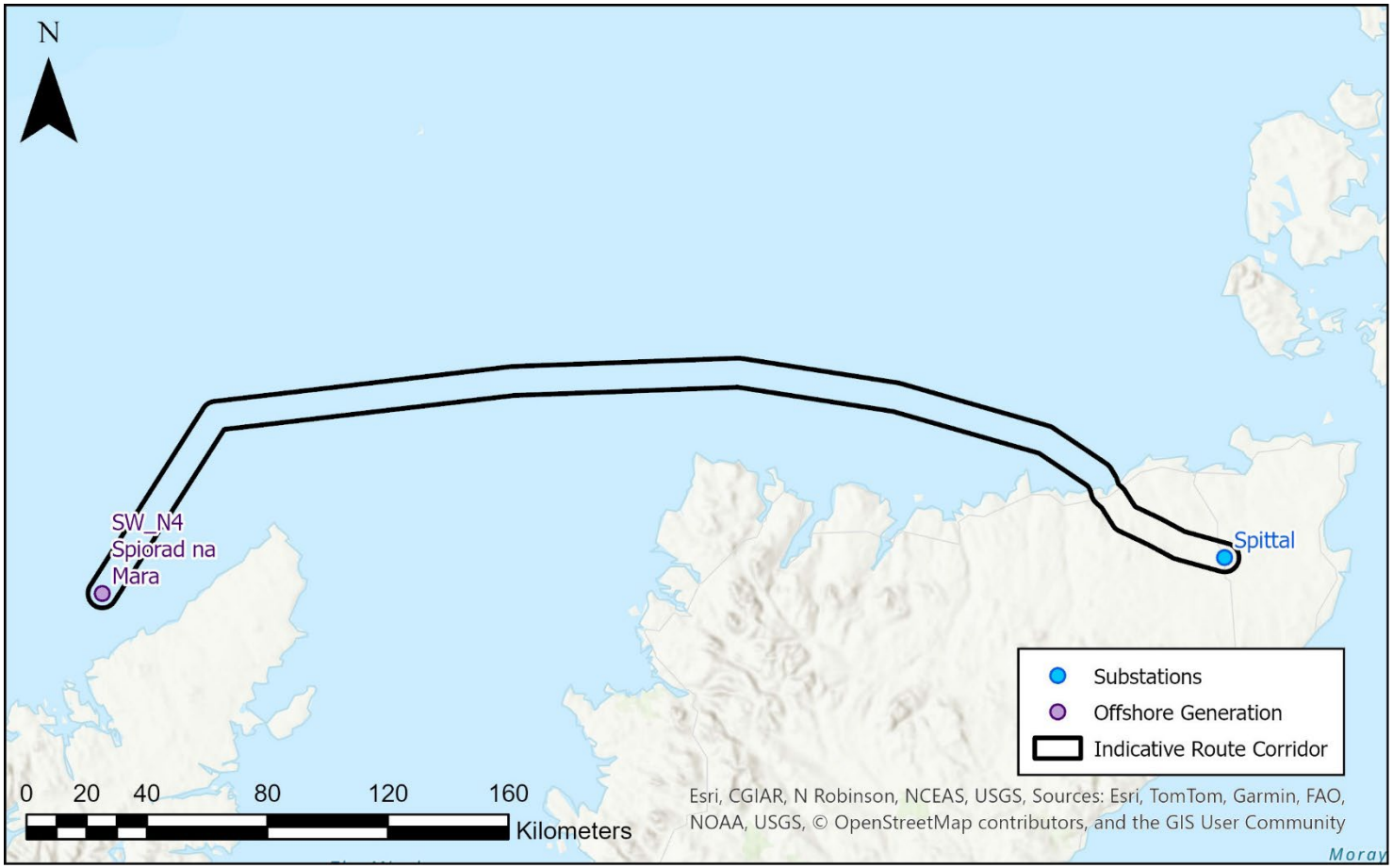
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) and the Sandside Bay SSSI (designated for dune habitat) are within the offshore, landfall and onshore route corridor, but can be avoided. There may be potential for short-term indirect impacts on the designated features of these sites during the construction and decommissioning phases and during cable maintenance activities, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall. There is limited scope to avoid this habitat at landfall and there is potential for direct and indirect impacts during construction and decommissioning; direct impacts have the potential to be long-term to permanent in nature in the footprint of infrastructure (-2). The Caithness Cliffs IBA is within the offshore, landfall, and onshore route corridor but can be avoided; there may be potential for short-term indirect effects within this area (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The settlement of Dounreay is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The offshore Annex 1 reefs and the Red Point Coast SSSI within the route corridor can be avoided, avoiding the potential for direct impacts (-1). The Annex 1 reefs at landfall cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two offshore military firing areas, two proposed offshore energy generation cables (Highland Wind Ltd wind farm and Orkney Transmission Connection Project) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads which cannot be avoided are located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (one oil/gas well/diffuser), one offshore energy generation site (Highland Wind Ltd wind farm) and the Dounreay urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are ten known wreck locations within the offshore route corridor and one within the route corridor at landfall. There are also three Scheduled monuments within the route corridor at landfall. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The settlement of Dounreay is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
This route also overlaps with H HND SW_N1 to Dounreay route. There could also be competition at Sandside Bay with the proposed Orkney-Dounreay link and the Highland Wind demo site cabling, although these projects are understood to be landfalling east of Sandside Bay which should avoid any conflict.				

North Scotland Region – NS5 - SW_N4 – Spittal						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_N4 Spiorad na Mara	Spittal	220	1000	1 HVDC	1	N – HND1
Overview of Route						



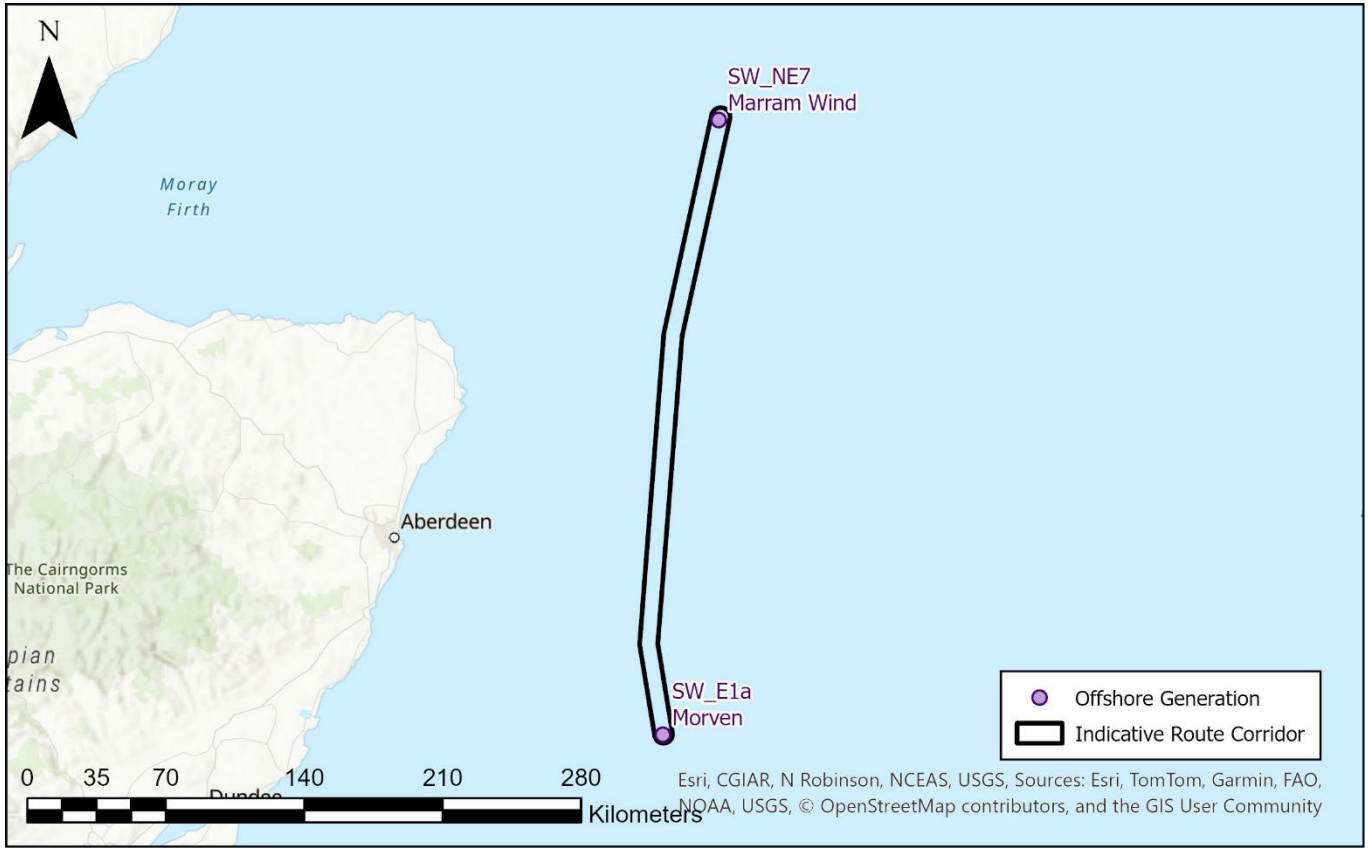
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The River Thurso SAC (designated for fish species including Atlantic salmon) cannot be avoided by the route corridor and would need to be crossed. There is potential for short-term direct and indirect impacts within this site during the construction and decommissioning phases and during cable maintenance activities (-2). It may be possible to avoid direct impacts by drilling beneath the site. The North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) and the Sandside Bay SSSI (designated for dune habitat) are within the offshore, landfall and onshore route corridor, but can be avoided. There may be potential for short-term indirect impacts on the designated features of these sites during the construction and decommissioning phases and during cable maintenance activities, which should be considered at the detailed design stage (-1). There are also numerous designated sites within the onshore route corridor that can be avoided. These are the Caithness and Sutherland Peatlands SAC (designated for freshwater and blanket bog habitats), Broubster Leans SAC (designated for mire and bog habitats), Caithness and Sutherland Peatlands SPA (designated for breeding common scoter), Caithness and Sutherland Peatlands Ramsar (designated for peatland habitats), Caithness Lochs SPA and Ramsar (designated for Greenland white-fronted goose, greylag goose and whooper swan), Broubster Leans SSSI, Loch Calder SSSI, and Loch Calum Flows SSSI. There may be potential for indirect impacts on the protected features of these sites, such as indirect habitat damage and disturbance of species, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall. There is limited scope to avoid this habitat at landfall and there is potential for direct and indirect impacts during construction and decommissioning; direct impacts have the potential to be long-term to permanent in nature in the footprint of infrastructure (-2). There are areas of ancient woodland within the onshore route corridor, however these are avoidable. The Caithness Cliffs IBA is within the landfall and onshore route corridor, and the Caithness and Sutherland Peatlands IBA, Caithness Lochs IBA and Broubster Leans RSPB Reserve are within the onshore route corridor; however, all of these areas can be avoided (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH)	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The settlement of Dounreay is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Red Point Coast SSSI, Annex 1 reefs, Achanarras Quarry SSSI and the Spittal Quarry SSSI can be avoided, avoiding the potential for direct impacts (-1). The Annex 1 reefs at landfall cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily moderate to poor quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and also during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (220.2 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two military firing areas, two proposed offshore energy cables (the Highland Wind Ltd wind farm and the Orkney Transmission Connection Project) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, and a railway line located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one oil/gas diffuser), one proposed wind energy generation site (Highland Wind Ltd wind farm), and the urban area of Dounreay within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 11 known wreck locations within the offshore route corridor and one within the route corridor at landfall. There are also five Scheduled monuments within the route corridor at landfall and 52 within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The settlement of Dounreay is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
. There could also be competition at Sandside Bay with the proposed Orkney-Dounreay link and the Highland Wind demo site cabling, although these projects are understood to be landfalling east of Sandside Bay which should avoid any conflict. The sub-station site at Spittal is relatively lightly constrained although it is located in an open flat area with limited opportunity for screening.				

SW_E1a - SW_NE7						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a (Morven)	SW_NE7 Marram	171	1500	2 HVDC	2	N – HND1
Overview of Route						

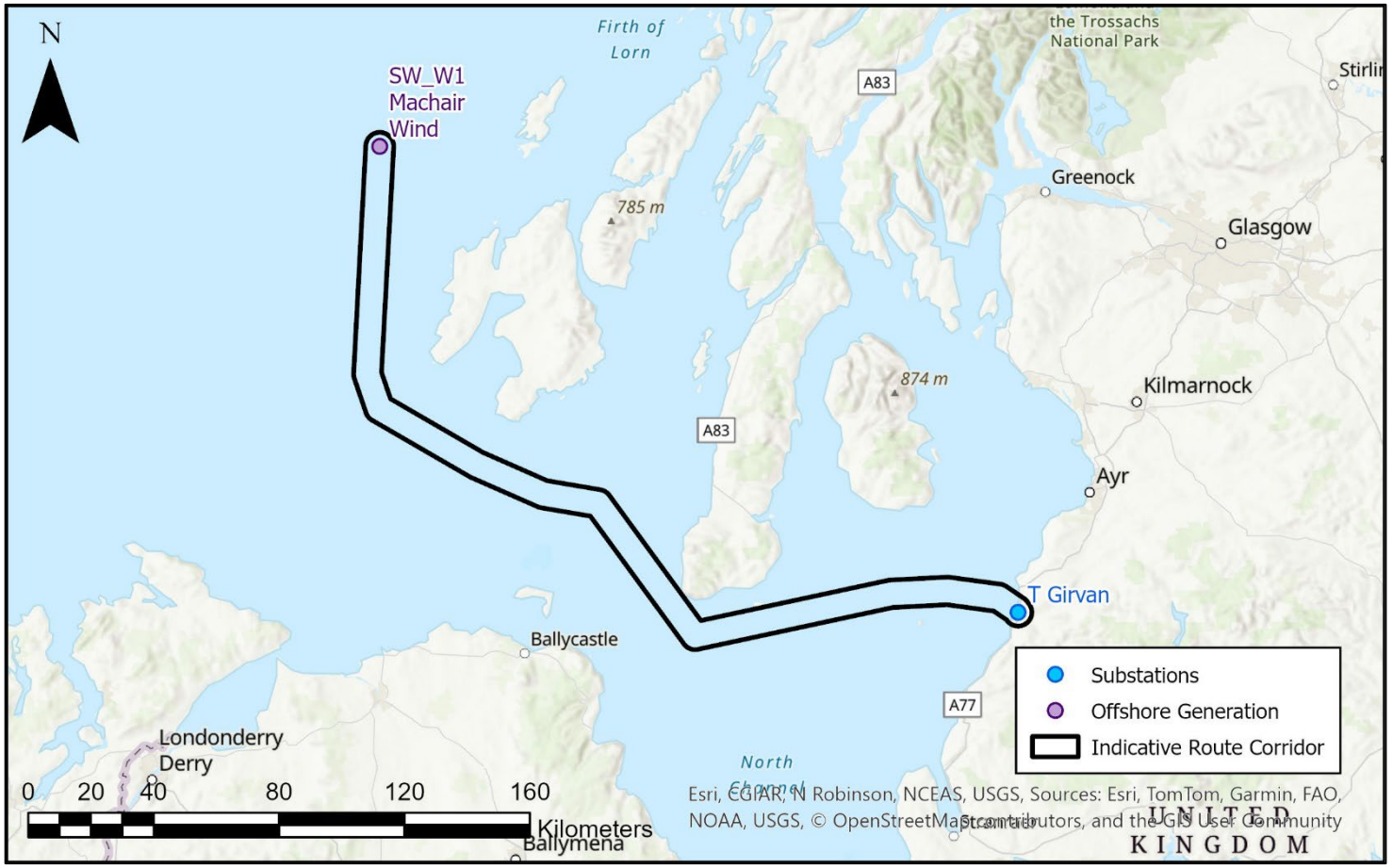


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Turbot Bank MPA (designated for its importance for sandeels) is within the offshore route corridor but can be avoided, avoiding the potential for direct impacts on protected features. The potential for indirect impacts on site features, such as through indirect habitat damage, will need to be considered at the project stage (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as four offshore cables, 30 offshore pipelines and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (31 oil/gas wells) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are four known wreck locations within the route corridor, which is located entirely offshore. These assets are avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
There are no identified cumulative and in combination constraints identified, although interaction with turbine siting and inter-array cables will need to be considered at DND stage.				

NWSIn8 - SW_W1 – T Girvan						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_W1 Machair	T Girvan	181	2000	2 HVDC submarine cables	1 HVDC underground cable trench	N – HND1
Overview of Route						



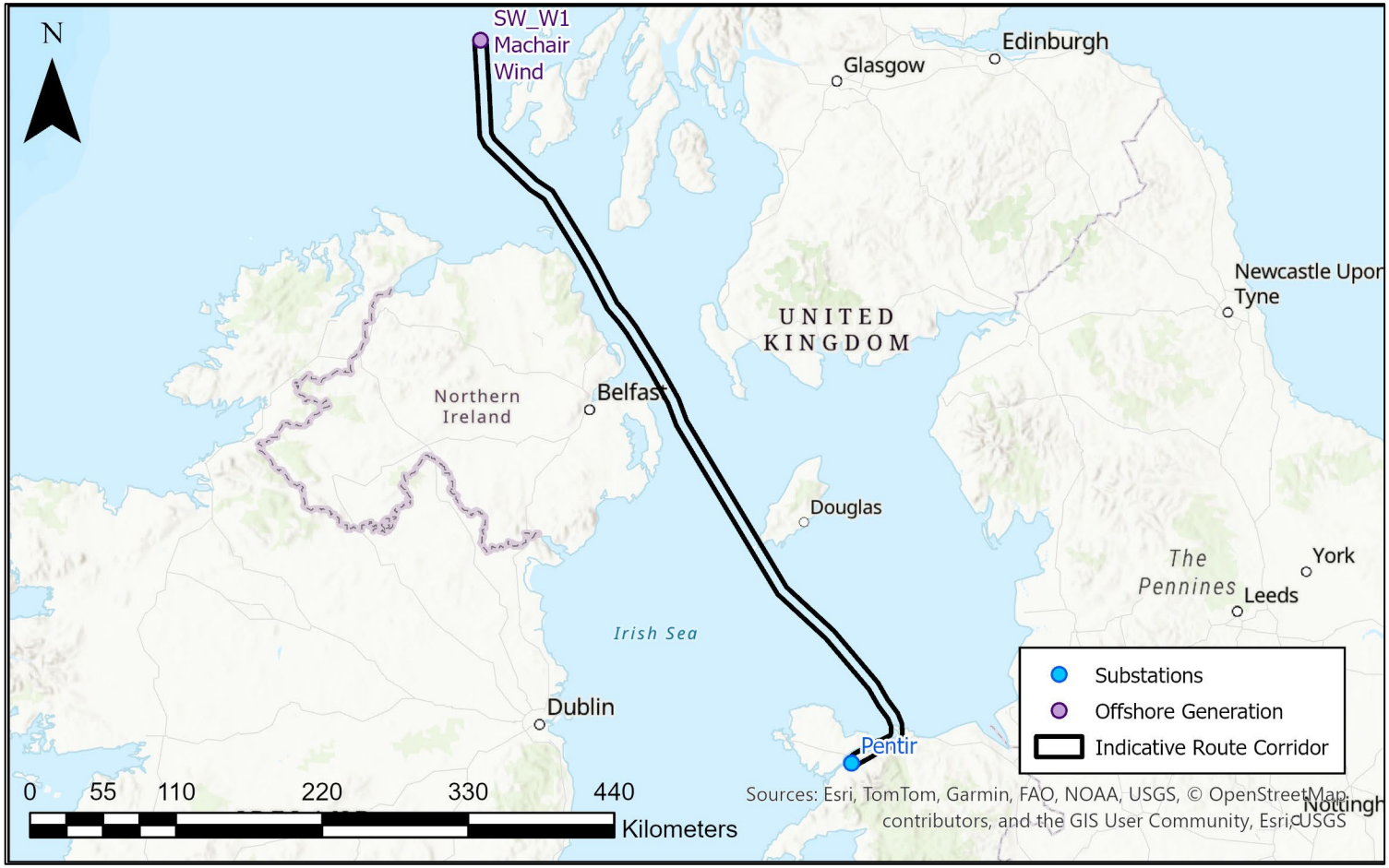
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Clyde Sea Sill MPA (designated for sand and coarse sediment communities, fronts and black guillemot) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to protected habitat and disturbance and displacement of protected species (-2). The Sanda Islands SSSI (designated for maritime cliff and breeding birds) is within the offshore route corridor but can be avoided. There may be potential for short-term indirect impacts on the protected features of this site during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). The Galloway and Southern Ayrshire Biosphere Reserve is also within the landfall and onshore route corridor and cannot be avoided, and there is potential for short-term direct and indirect impacts on the flora and fauna within this site (-1). The Sanda Island IBA is also within the offshore route corridor but can be avoided (-1). There are known locations of Annex I reef within the offshore route corridor, which cannot be avoided. There is potential for direct and indirect impacts during construction and decommissioning and cable maintenance activities; direct impacts have the potential to be long-term to permanent in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area (industrial estate) at Chapeldonan is within the route corridor at landfall and onshore, but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs within the 5km indicative route corridor that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily very good and good quality that cannot be avoided (-2). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these need to be avoided or would have to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as five offshore cables and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (two offshore cables), a traffic separation zone, two proposed energy generation sites (Mull of Kintyre wind farm and a tidal farm by Argyll Tidal Ltd.), onshore infrastructure (Scottish Power cables, towers and overhead lines), a railway line, and the Chapeldonan urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Conservation Areas or listed buildings within the 5km indicative route corridor. There are 16 known wreck locations within the offshore route corridor and one within the route corridor at landfall, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There are three Scheduled monuments within the route corridor at landfall and three within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The Ayrshire Coastal Path National Trail is within the route corridor at landfall and onshore cannot be avoided by the cable route, and there is potential for short-term direct visual impacts within this area during the construction and decommissioning phases, and during cable maintenance activities (-2).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The urban area (industrial estate) at Chapeldonan is within the route corridor at landfall and onshore, but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
There are other proposed offshore cables that overlap the SW_W1 to Girvan Tee connection. The HND Girvan Tee to Hunterston and Girvan Tee to Hunterston shares a common landfall with this route so this will need to be considered at the detailed design stage.				

SW_W1 to Pentir						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_W1 Machair	Pentir	386	2000	2	1	N – HND1
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The route corridor is extensive and there are several designated sites that cannot be avoided. Within the offshore route corridor these include the North Channel SAC (designated for harbour porpoise), South Rigg MCZ (designated for a range of marine habitats that support a wide variety of species) and Calf and Wart Bank MPA. Within the route corridor both offshore and at landfall these include the Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay SAC (designated for sandbanks, mudflats and sandflats, sea caves and shallow inlets and bays), Liverpool Bay SPA (designated for breeding common and little tern, non-breeding red-throated diver, common scoter, and little gull, and waterbird assemblage) and Aber Afon Conwy SSSI (designated for a moth species). There is potential for short-term direct and indirect impacts on protected features within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, including habitat damage and disturbance and displacement of species (-2). There are also numerous designated sites that are within the route corridor but are possible to avoid. Within the offshore route corridor these include the North Anglesey Marine SAC (designated for harbour porpoise), The Maidens SAC (designated for reefs, sandbanks and grey seal), Traeth Lafan/ Lavan Sands, Conway Bay SPA (designated for oystercatcher, red-breasted merganser, curlew, great-crested grebe and redshank), Rathlin MCZ (designated for deep-sea bed and black guillemot) and Traeth Lafan SSSI (designated for oystercatchers and other notable bird species). Within the route corridor at landfall these include the Great Ormes Head / Pen Y Gogarth (designated for heath, grassland and vegetated sea cliffs) and Sychnant pass SSSI (designated for heath and moth species). Within the onshore route corridor these include the Coedydd Aber SAC (designated for freshwater habitats, grassland and woodland), Coedydd Aber SSSI (designated for woodland) and Eryri SSSI (designated for various features including heathland, grassland and freshwater habitats and species). There may be potential for short-term indirect impacts on protected features within these sites, which should be considered at the detailed design stage (-1). There are known areas of NRW Key Sensitive Habitats within the offshore and landfall route corridor (including mudflats and sandflats and large shallow inlets and bays). These areas are only avoidable via an alternative onshore cable approach, and there is potential for direct and indirect impacts on these sensitive habitats (-3). There are known locations of Annex I reef within the offshore and landfall route corridor, and areas of Annex I sandbank within the offshore route corridor, which cannot be avoided. There is potential for direct and indirect impacts during construction and decommissioning and cable maintenance activities; direct impacts have the potential to be long-term to permanent in the footprint of infrastructure (-2). There are areas of ancient woodland within the landfall and onshore route corridor, which there is limited scope to avoid onshore (HDD	-3	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
may be used), and there is potential for direct and indirect impacts during the construction and decommissioning phases and during cable maintenance activities (-1). There is an area of high density for grey seals offshore, which can be avoided. The Traeth Lafan, Conwy Bay IBA is also within the offshore route corridor, the Maes-Y-Facrell, Pen Y Gogarth NNR within the route corridor at landfall, and the Coedydd Aber NNR within the onshore route corridor, however all of these areas can be avoided. The potential for indirect impacts should be considered at the detailed design stage (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The major settlements of Llandudno and Conwy are within the route corridor at landfall, and the settlements of Bangor, Llanfairfechan, Penmaenmawr, Dwygfylchi and Conwy are within the onshore route corridor but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There are four bathing water sites within the offshore and two within the landfall route corridor which can all be avoided. There is also a RYA boating area within the offshore and landfall route corridors which cannot be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the bathing waters (indirect) and the boating areas (direct) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites, the Rathlin MPA, Great Ormes Head / Pen Y Gogarth, Sychnant pass SSSI and the Eryri SSSI which can be avoided, avoiding the potential for direct impacts (-1). The Annex 1 reefs, the South Rigg MCZ and Annex 1 sandbanks within the 5km indicative route corridor cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good to moderate quality (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases as well as during cable maintenance activities.	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these will need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites and areas benefiting from defences offshore, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (386.7 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA)	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for short-term negative effects on MA as 32 offshore cables, three pipelines, the Hibernia Atlantic UK Ltd. offshore energy generation cable, a traffic separation zone, high-density shipping areas and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (two oil/gas wells), two ports (Bangor Port and Port Penrhyn Port), two marinas (Conwy Marina and Deaganwy Quays Marina), two dredge and spoil dumping sites, a navigational dredging area, the Isle of Islay wind farm, two proposed offshore energy generation sites (Isle of Islay and Awel y Mor), onshore infrastructure (National Grid overhead lines and towers), railways and five urban areas (Llandundo, Llanfairfechan, Penmaenmawr, Dwygyfylchi and Conwy) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 52 known wreck locations within the offshore route corridor and three at landfall, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument within the offshore route corridor, nine Scheduled monuments and four listed buildings within the route corridor at landfall and 47 Scheduled monuments and >300 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L)	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The Snowdonia National Park is within the route corridor at landfall and onshore with limited scope for avoidance by the cable route, and there is potential for short-term direct visual impacts within this area during the construction and decommissioning phases, and during cable maintenance activities (-2). The Slate Landscape of North West Wales WHS and Great Orme Heritage Coast are also within the route corridor at landfall but can be avoided; the potential for indirect impacts should be considered at the detailed design stage. The major settlements of Llandudno and Conwy are within the route corridor at landfall, and the settlements of Bangor, Llanfairfechan, Penmaenmawr, Dwygfylchi and Conwy are within the onshore route corridor but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
The HND Ballantrae and T Girvan offshore routes all cross the SW_W1 to Pentir route as well as having common landfalls, so this will need to be considered at the detailed design stage.				

F.1.2 HNDFUE ScotWind Routes

Shetland Hub - Blackhillock						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Shetland Hub	Blackhillock	371	1800	2 DC	1	Y - HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The East Mainland Coast, Shetland SPA (designated for breeding population of Shag, and non-breeding populations of Great northern diver, Red-throated diver, Slavonian grebe, Common scoter, Eider, Goldeneye, Long-tailed duck, Red-breasted merganser, Scaup, Shag and Velvet scoter) is within the offshore route corridor and the landfall route corridor at Shetland and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Designated bird species at this site are currently in Favourable condition, however red-throated diver have been identified as sensitive to pressures associated with cabling activities. The Moray Firth SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) is within the offshore route corridor and the landfall route corridor at Moray and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Designated bird species at this site are currently in favourable condition with the exception of European Shag, however this species, as well as others such as Common scoter and Red-throated diver, may be sensitive to certain pressures associated with cabling activities. Spey Bay SSSI (designated for riparian and coastal habitats, and butterflies) is also within the landfall route corridor at Moray and cannot be avoided, although HDD under the site may be possible. There is potential for direct and indirect impacts on the designated features, which will need to be considered further at the project stage (-2). The Noss SPA (designated for breeding populations of Fulmar, Gannet, Great skua, Guillemot, Kittiwake, Puffin, and the overall breeding seabird assemblage) is within the offshore route corridor but can be avoided by the cable route. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-2). Some species at this site are currently in unfavourable condition, however, have not been identified as particularly sensitive to pressures associated with cabling activities. The River Spey SAC (designated for freshwater pearl mussel, sea lamprey, Atlantic salmon and otter) is within the landfall and onshore route corridor at Moray but can be avoided by the cable route. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-2), with designated features in unfavourable condition and identified as highly sensitive	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
to water quality and sedimentation impacts. The Lower River Spey- Spey Bay SAC (designated for perennial vegetation of stony banks, and alluvial forests), Moray and Nairn Coast SPA (designated for breeding population of Osprey and non-breeding populations of Bar-tailed godwit, Dunlin, Greylag goose, Oystercatcher, Pink-footed goose, Red-breasted merganser, Redshank, Wigeon, and its waterfowl assemblage), Moray and Nairn Coast Ramsar (coastal and riverine habitats, dunes, and wet woodland, as well as for migrating Greylag and Pink-footed geese, over-wintering Redshank, and waterfowl assemblage), Lower River Spey SSSI, River Spey SSSI, are also within the landfall and onshore route corridor at Moray. All of these sites are avoidable by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-2). The Moray Basin, Firths and Bays IBA is within the landfall and onshore route corridor at Moray but can be avoided by the cable route, avoiding the potential for direct impacts within this area. There are known locations of Annex I reef within the offshore route corridor and the landfall route corridor at Shetland and Moray. Some of these areas cannot be avoided, and there is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. There are known areas of Annex I saltmarsh within the landfall route corridor at Moray, however these are avoidable. There are known locations of ancient woodland within the onshore route corridor at Moray which cannot be avoided but can be minimised at the project stage. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. There is known high density of grey seals within the landfall route corridor at Shetland. This area cannot be avoided and there is potential for direct and indirect impacts on the species in the short-term construction and decommissioning phases and during cable maintenance activities including damage, disturbance and displacement, which will need to be considered at the project stage (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH)	-1	0/+2	0/+2	Direct & Indirect

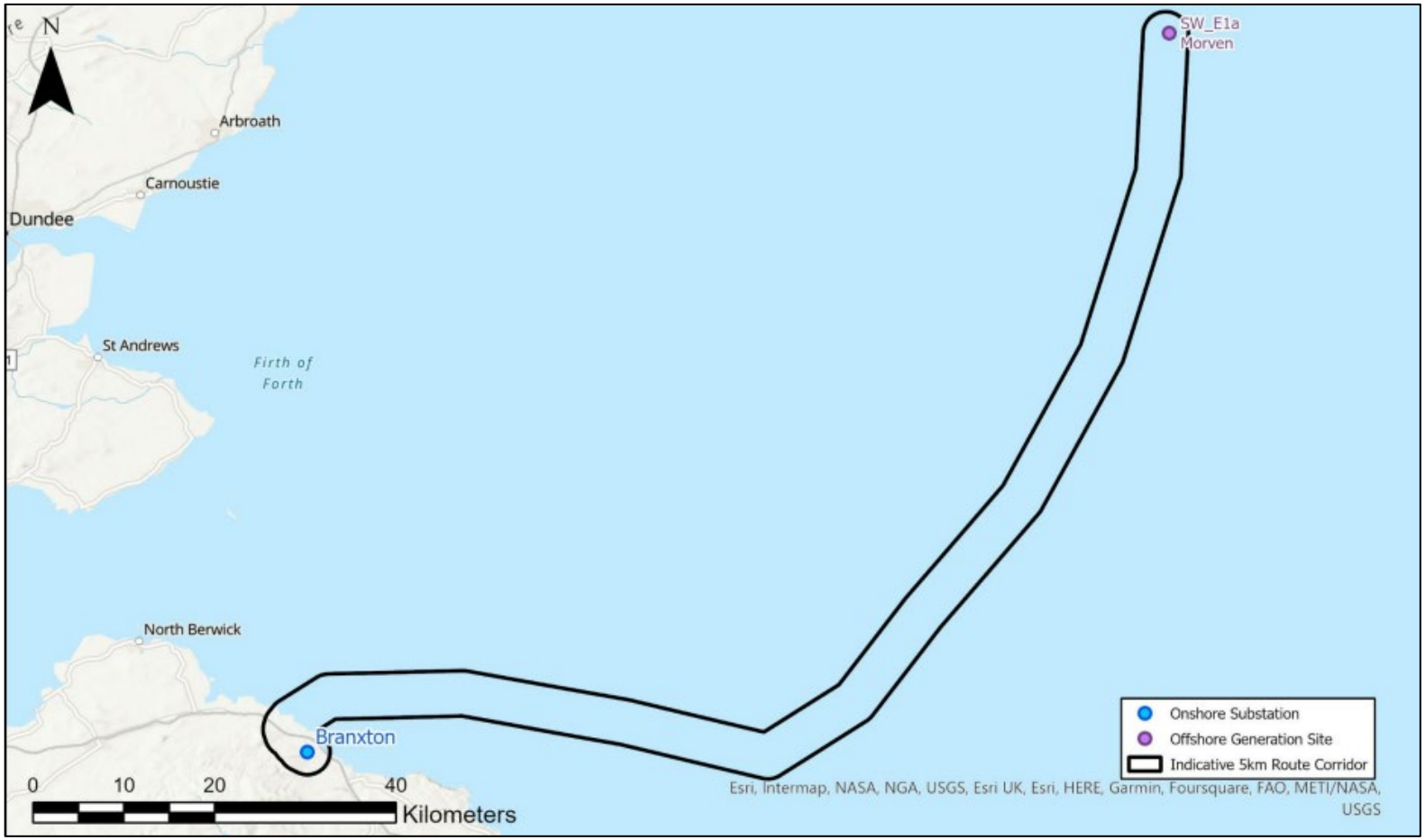
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The urban area of Keith is within the onshore route corridor at Moray. However, this urban area can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are offshore Annex 1 reefs and reefs at the Shetland landfall within the 5km indicative route corridor, which cannot be completely avoided (-2). At the Moray landfall there are also Annex 1 reefs and the Lower River Spey SSSI, but these can be avoided, reducing the potential for direct impacts (-1). However, the Spey Bay SSSI at landfall cannot be avoided (-2). Onshore at Moray, the Tynet Burn SSSI, Lower River Spey SSSI and the River Spey SSSI is present but can be avoided, reducing the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of moderate to poor quality (-1). There is potential for short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore at Shetland and Moray, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall at Shetland, with limited scope to avoid these. There are rivers within the onshore route corridor and at landfall at Moray, these will need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall at Shetland; these can be avoided onshore, but there is limited scope to avoid these at landfall. There are National Flood Zones within the onshore route corridor and at landfall at Moray; these cannot be avoided; therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the landfall route corridor, however these can be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (371.9 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as nine offshore cables, two offshore pipelines, the Moray Firth military area and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, a railway line and numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (4 oil/gas wells and three offshore cables), the Beatrice wind farm cable, the proposed Moray offshore wind farm, the proposed Shetland HDVC link, dredging areas at Spey Bay, and the urban area of Keith located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) The potential for significant negative effects on CH can be avoided within the route corridor. There are no WHS, registered battlefields, historic MPAs, Conservation Areas or listed buildings within the 5km indicative route corridor. There are 16 known wreck locations within the offshore route corridor, however these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There are three Scheduled monuments within the 5km indicative landfall route corridor at Shetland, five within the onshore route corridor at Shetland and two within the onshore route corridor at Moray. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. The Gordon Castle Registered Park and Garden is within the onshore route corridor at Moray. This site can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is also potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts or National Trust lands within the 5km indicative route corridor. The urban area of Keith is within the onshore route corridor at Moray. However, this urban area can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. The Speyside Way Great Trail is within the landfall and onshore route corridor at Moray, and the Moray Coast Great Trail is also within the route corridor at landfall. These areas cannot be avoided by the cable route, and there is potential for short-term direct impacts on landscape and views within these areas during the construction and decommissioning phases, and during cable maintenance activities (-2).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
The Moray landfall location is shared with the designated cable route to the Beatrice Substation and the HVDC Caithness to Moray link. The Moray West OWF cable corridor also landfalls in this area for connection to New Deer substation. At the Shetland end, the only competition is with the various HNDFUE windfarm connections into the Shetland Hub.				

SW_E1a – Branxton						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a Morven	Branxton	153	2000	2 DC	1	Y – HNDFUE ScotWind
Overview of Route						



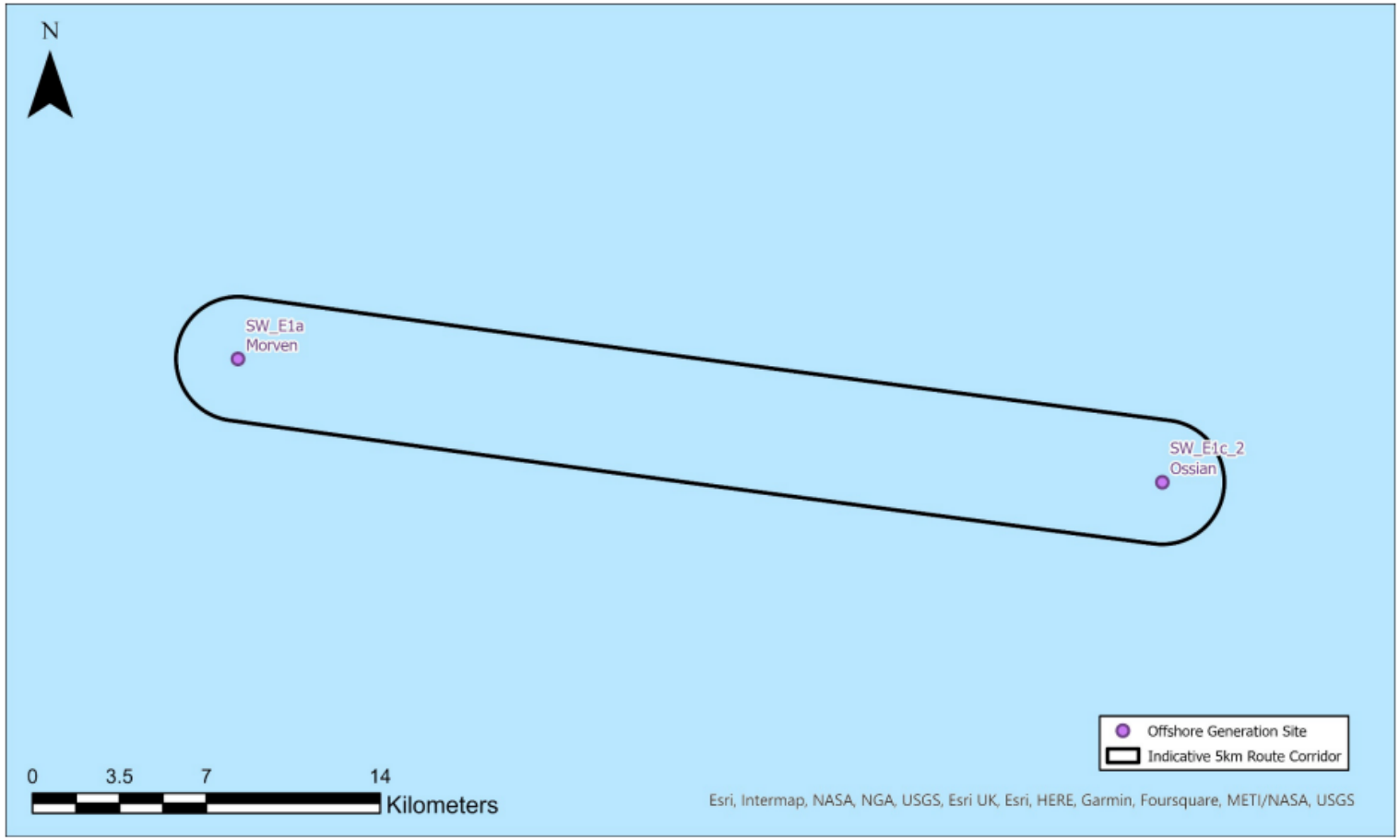
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species and damage to supporting habitat (-2). Potential impacts and mitigation will need to be considered at the detailed design stage. The Firth of Forth Banks Complex MPA (designated for sands and gravels and ocean quahog) is within the offshore 5km indicative route corridor but can be avoided, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of this site during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-1). The Barns Ness Coast SSSI (designated for saltmarsh, sand dune and shingle habitats) is within the route corridor at landfall and there is limited potential to avoid this site. There is potential for direct and indirect impacts on the protected features within this site in the short-term construction and decommissioning phases and during cable maintenance activities (-2). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that may not be possible to avoid. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. There are known locations of ancient woodland within the onshore route corridor, however these can be avoided by the cable route within the 5km indicative corridor. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The Whitesands bathing water site is located within the landfall route corridor; however, this can be avoided, avoiding the potential for direct negative impacts (-1). There is potential for short-term negative impacts such as noise and disturbance to the local population and short-term, indirect water quality impacts to the bathing water site during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There is the Firth of Forth Banks Complex MPA and a landfill site which can be avoided, avoiding the potential for direct impacts (-1). Annex 1 reefs and the Barns Ness Coast SSSI within the 5km indicative route corridor cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent agricultural land within the onshore route corridor. The other agricultural lands are primarily of good quality, containing small patches of moderate to poor land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the route corridor onshore that cannot be completely avoided, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; there is limited scope to avoid these, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as the Neart na Gaoithe offshore wind farm cable and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, Scottish Power cables, a railway line and numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is onshore infrastructure (Scottish Power overhead lines and substations) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Conservation Areas or listed buildings within the 5km indicative route corridor. There are 17 known wreck locations within the offshore route corridor, however, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There are two Scheduled monuments within route corridor at landfall and 29 within the onshore route corridor, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. The Boxmouth Park Parks and Gardens is within the route corridor at landfall and the Dunglass Garden and designed landscape is within the onshore route corridor. These sites can be avoided by the cable route within the corridor, avoiding the potential for direct impacts within these sites. There may be potential for short-term	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
impacts on the setting of these heritage assets during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor. In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).	-1	0	0	Direct
Cumulative and in combination issues				
The HND PA_2 to Blyth link is crossed to the south-west of the Firth of Forth Banks Complex MPA. The HND PA_2 to Branxton link shares a similar landfall and onshore route to the SW_E1a to Branxton link. The INTOG route Cedar to Branxton shares a similar offshore approach. Two proposed interconnectors also connect to near Torness Nuclear Power Station, they are South East Scotland to South Humber (concept / early planning) and the Eastern HVDC Link from Torness to Hawthorn Pit (concept / early planning). As the landfall for SW_E1a to Branxton is located to the west of Torness, no cumulative impacts are expected. Offshore, the route corridor will likely need to cross the South East Scotland to South Humber Interconnector (depending on the final alignment of this interconnector).				

SW_E1a – SW_E1c_2						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a Morven	SW_E1c_2 Ossian	37	2000	4 AC	4	Y – HNDFUE ScotWind
Overview of Route						

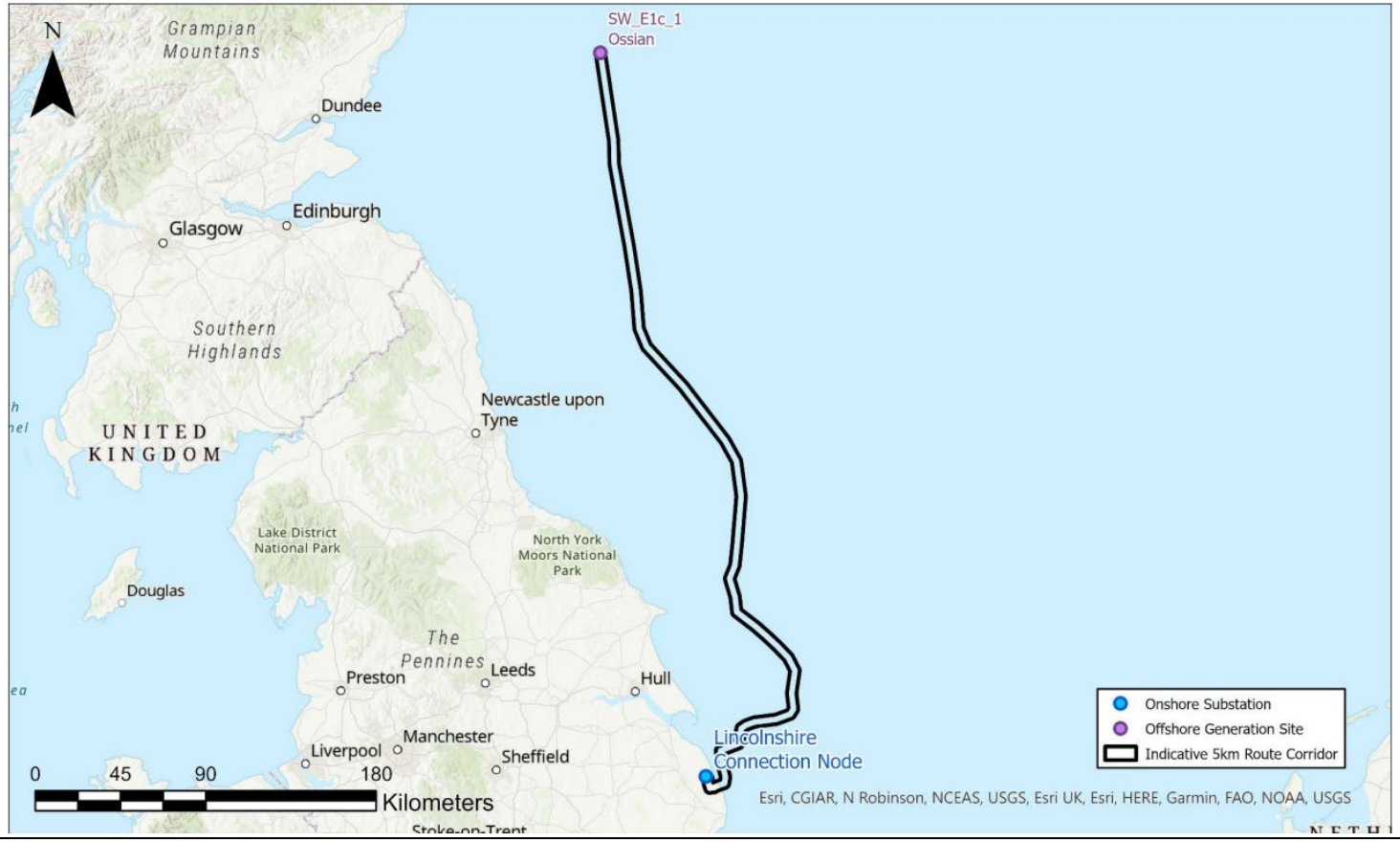


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There are no known significant material assets or infrastructure within the 5km indicative corridor. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is no potential for short-term direct or indirect effects on significant material assets and infrastructure within the indicative route corridor during the construction and decommissioning phases, as well as during any cable maintenance activities (0). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	0	0/+2	0/+2	Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, known wreck locations, registered battlefields, historic MPAs, Conservation Areas, Scheduled monuments or listed buildings within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are no identified cumulative and in combination constraints.				

SW_E1c_1 – Lincolnshire Connection Node						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1c_1 Ossian	Lincolnshire Connection Node	461	2000	2 DC	1	Y - HNDFUE ScotWind
Overview of Route						



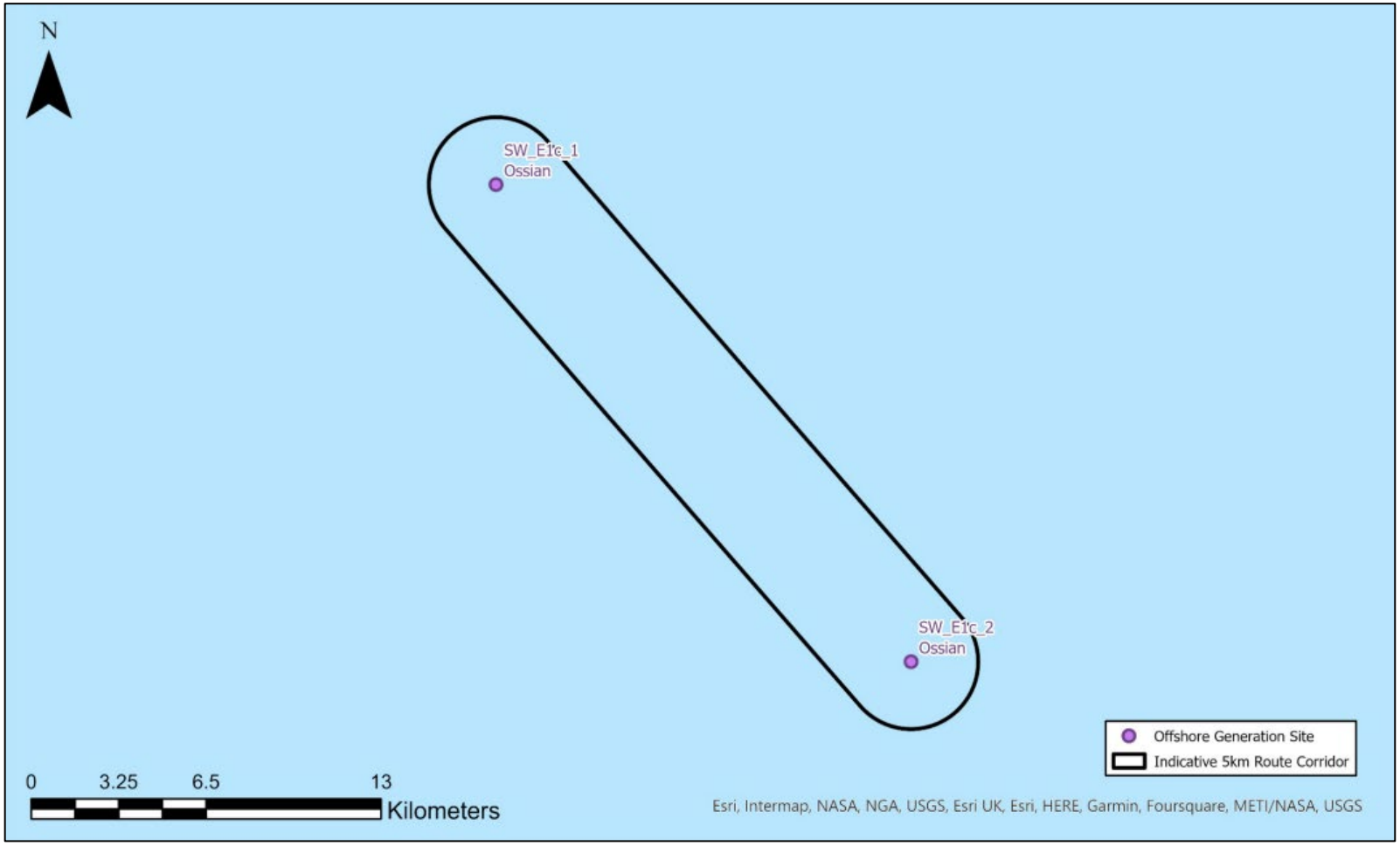
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Greater Wash SPA (designated for non-breeding Red-throated Diver, Common Scoter, and Little Gull, and breeding Sandwich tern, Common tern and Little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Sea Bank Clay Pits SSSI is also within the route corridor at landfall and onshore, but can be avoided by the cable route, however the potential for indirect impacts on site features will need to be considered at the project stage (-1). There are known locations of Annex I reef within the route corridor offshore and at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity (-1). There is known high density of grey seals within the offshore route corridor and at landfall. This area cannot be avoided offshore and there is potential for direct and indirect impacts on the species in the short-term construction and decommissioning phases and during cable maintenance activities including damage, disturbance and displacement, which will need to be considered at the project stage (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban area of Sandilands is within the route corridor at landfall and onshore. However, this urban area can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There are also two avoidable bathing areas (Moggs Eye and Sutton-On-Sea) and an unavoidable RYA boating area within the offshore and landfall route corridor. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the bathing (indirect) and boating areas (direct) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and historic landfill sites within the 5km indicative route corridor, but both can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are areas identified as very high-quality agricultural land within the onshore route corridor that cannot be avoided (-2). The other agricultural lands are primarily of good quality containing small patches of moderate to poor land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative onshore route corridor and at landfall, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall that cannot be avoided, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are large areas of National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (461 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as the Hornsea 1 OFTO and Hornsea OFTO 2 cables, 15 offshore cables, 12 offshore pipelines, high-density shipping areas, three military areas (Donna Nook, Staxton and Druridge Bay) and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (39 oil/gas wells and nine oil/gas installations), the Morven offshore wind farm lease area, the Triton Knoll offshore cable and the Sandilands urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) The potential for significant negative effects on CH can be avoided within the route corridor. There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 44 known wreck locations within the offshore route corridor, however these can all be avoided by the cable route within the corridor. There are also four listed buildings within the route corridor at landfall and 43 listed buildings and five Scheduled monuments within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to the cable route. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban area of Sandilands is within the route corridor at landfall and onshore. However, this urban area can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The landfall location is south of Sandilands and shares a similar landfall to HND routes into Lincolnshire Connection Node and these may require a coordinated approach with this route and potentially planned east coast bootstraps from Scotland. The offshore approach is spatially constrained due to a gap of 10km for all connections to Lincolnshire Connection Node and Weston Marsh to pass through with other existing cables. There are also cable crossings for HND routes required in waters less than 10m in depth. Offshore the link crosses HND links to Birkhill Wood / Creyke Beck, PA_1 to Hawthorn Pit, SW_E1a to R4_1, SW_E1a to R4_2 and INTOG routes Cedar to Branxton, Cenos to Lackenby and Cenos to Hawthorn Pit.				

SW_E1c_1 – SW_E1c_2						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1c_1 Ossian	SW_E1c_2 Ossian	23	1000	2 AC	2	Y - HNDFUE ScotWind
Overview of Route						

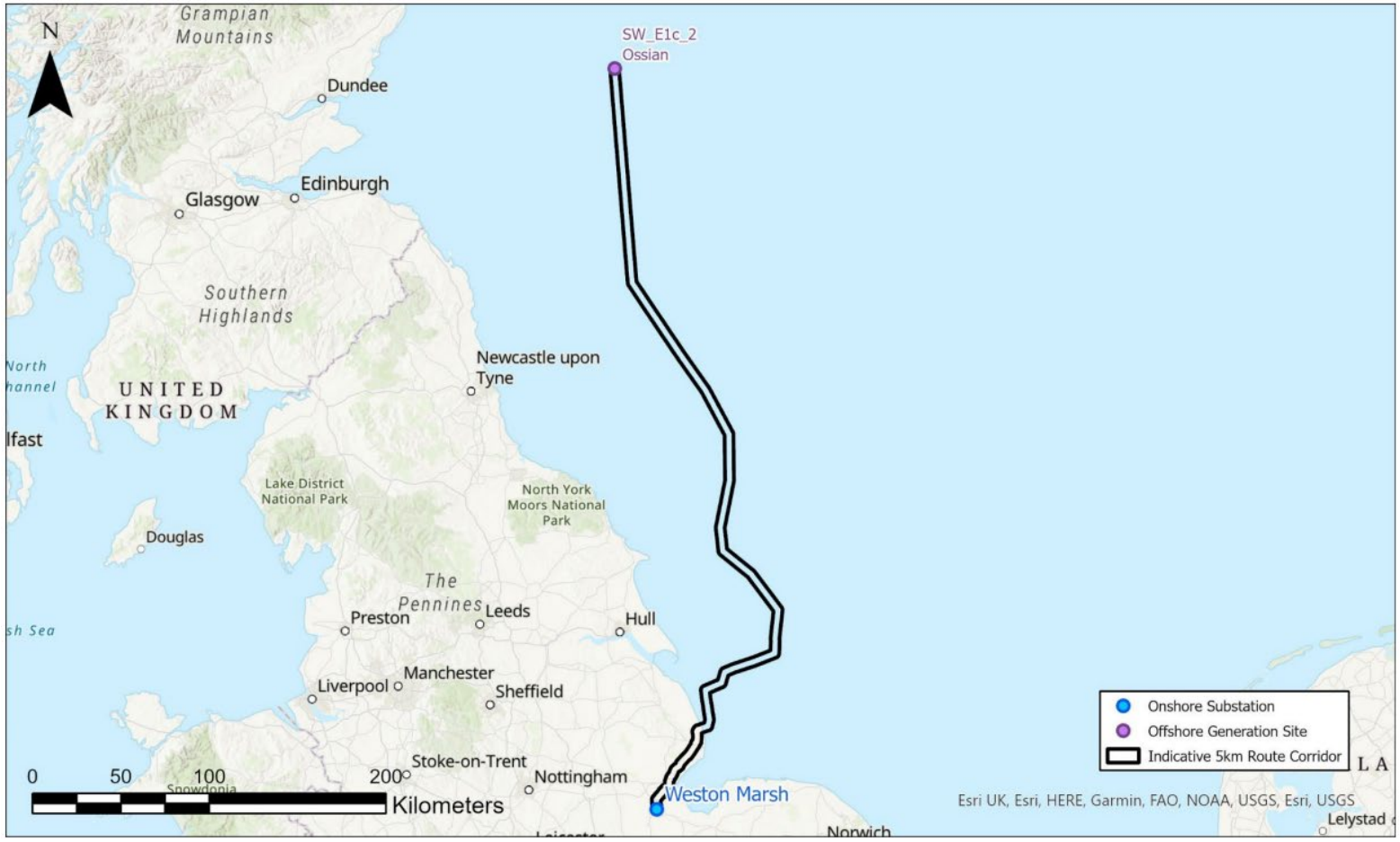


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There are no known significant material assets or infrastructure within the 5km indicative corridor. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is no potential for short-term direct or indirect effects on significant material assets and infrastructure within the indicative route corridor during the construction and decommissioning phases, as well as during any cable maintenance activities (0). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	0	0/+1	0/+1	Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, known wreck locations, registered battlefields, historic MPAs, Conservation Areas, Scheduled monuments or listed buildings within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).	-1	0	0	Direct
Cumulative and in combination issues				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are no identified cumulative and in combination constraints identified, although interaction with turbine siting and inter-array cables will need to be considered at DND stage.				

SW_E1c_2 – Weston Marsh						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1c_2 Ossian	Weston Marsh	488	2000	2 DC	1	Y – HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Greater Wash SPA (designated for non-breeding Red-throated Diver, Common Scoter, and Little Gull, and breeding Sandwich tern, Common tern and Little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Wash and North Norfolk Coast SAC (designated for sea inlets, tidal rivers, estuaries, mud flats, sand flats, lagoons, salt marshes, salt pastures, and salt steppes) and The Wash SPA (red-throated diver, common scoter, and little gull during the non-breeding season, and for breeding sandwich tern, common tern and little tern) and Ramsar site (designated for intertidal bay, important mudflats, sandbank, and saltmarsh) are within the onshore 5km indicative route corridor but can be avoided, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage, with these sites known to be sensitive to pressures associated with cabling. The Sea Bank Clay Pits SSSI is also within the route corridor at landfall and The Wash SSSI, Bratoft Meadows SSSI, Frampton Marsh RSPB and The Wash IBA are within the onshore 5km indicative route corridor. All these sites can be avoided by the cable route, however the potential for indirect impacts on site features will need to be considered at the project stage.	-2	-2	-2	Direct & Indirect

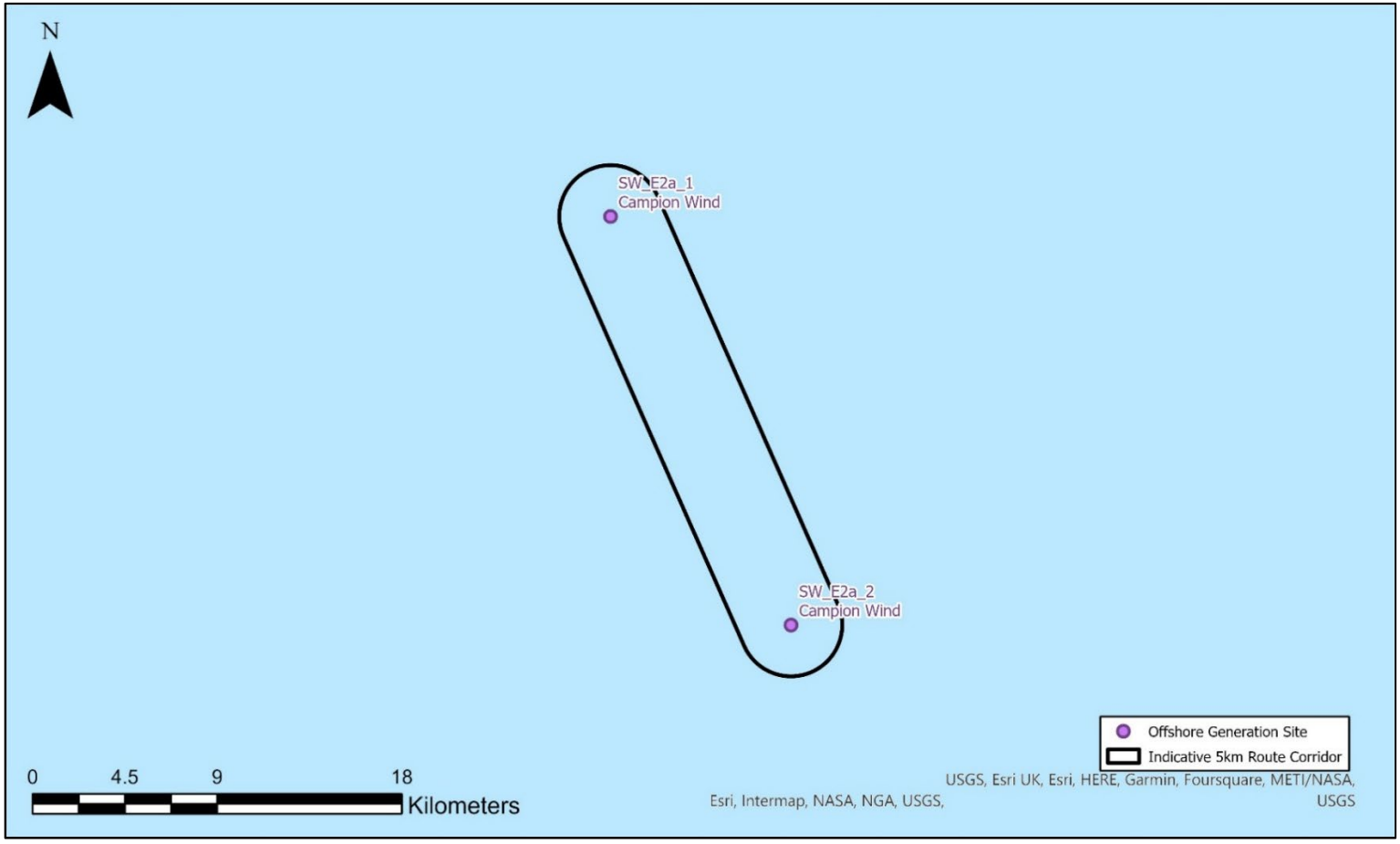
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are known locations of Annex I reef within the offshore route corridor that cannot be avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. There are known areas of Annex I saltmarsh within the onshore route corridor. These can be avoided by the cable route, avoiding the potential for direct impacts. There is known high density of grey seals within the offshore route corridor and at landfall. This area cannot be avoided offshore and there is potential for direct and indirect impacts on the species in the short-term construction and decommissioning phases and during cable maintenance activities including damage, disturbance and displacement, which will need to be considered at the project stage (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban area of Chapel St Leonards is within the route corridor at landfall and there are 19 urban areas within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There are also avoidable bathing areas (Anderby and Chapel St Leonards) within the landfall and onshore route corridors and an unavoidable RYA boating area within the offshore route corridor. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the boating (direct) and bathing areas (indirect) through displaced sediments during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs, the Wash SSSI, Chapel Point to Wolla Bank SSSI and a historic landfall site within the 5km indicative route corridor, but all of which can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils. There are areas identified as excellent quality agricultural land within the onshore route corridor (-2). The other agricultural lands are primarily of very good and good quality (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative onshore route corridor and at landfall, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the onshore route corridor that cannot be avoided, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the onshore route corridor, however these can be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (488.8 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as the Hornsea 1 OFTO, Hornsea OFTO 2 and Triton Knoll cables, 12 offshore cables, 10 offshore pipelines, high-density shipping areas, two military areas (Staxton and	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Druridge Bay) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (54 oil/gas wells and four oil/gas installations), dredging areas off the coast of Humber and Saltfleet, and the 19 urban areas located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Parks and Gardens or Conservation Areas within the 5km indicative route corridor. There are 50 known wreck locations within the offshore route corridor. There are also 20 Scheduled monuments and 242 listed building within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The potential for direct negative impacts on L can be avoided within the route corridor. There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban area of Chapel St Leonards is within the route corridor at landfall and there are 19 urban areas within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
A key constraint in terms of cumulative impacts is associated with the Outer Dowsing OWF HND1 connection, which was identified to landfall to the north of Chapel St Leonards. There is also potential for cumulative impact with other HND and HNDFUE connections going to LCN, Weston Marsh and potentially proposed east coast bootstraps linking from Scotland to this area of the English coast as due to the distribution of environmental designations sensitive to cabling and other offshore infrastructure there is only a relatively narrow corridor for connections to approach the Lincolnshire coast. Offshore the link crosses HND links to Birkhill Wood / Creyke Beck, PA_1 to Hawthorn Pit, SW_E1a to R4_1, SW_E1a to R4_2 and INTOG routes Cedar to Branxton, Cenos to Lackenby and Cenos to Hawthorn Pit.				

SW_E2a_1 - SW_E2a_2						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E2a_1 Campion	SW_E2a_2 Campion	21	2500	5 AC	5	Y – HNDFUE ScotWind
Overview of Route						

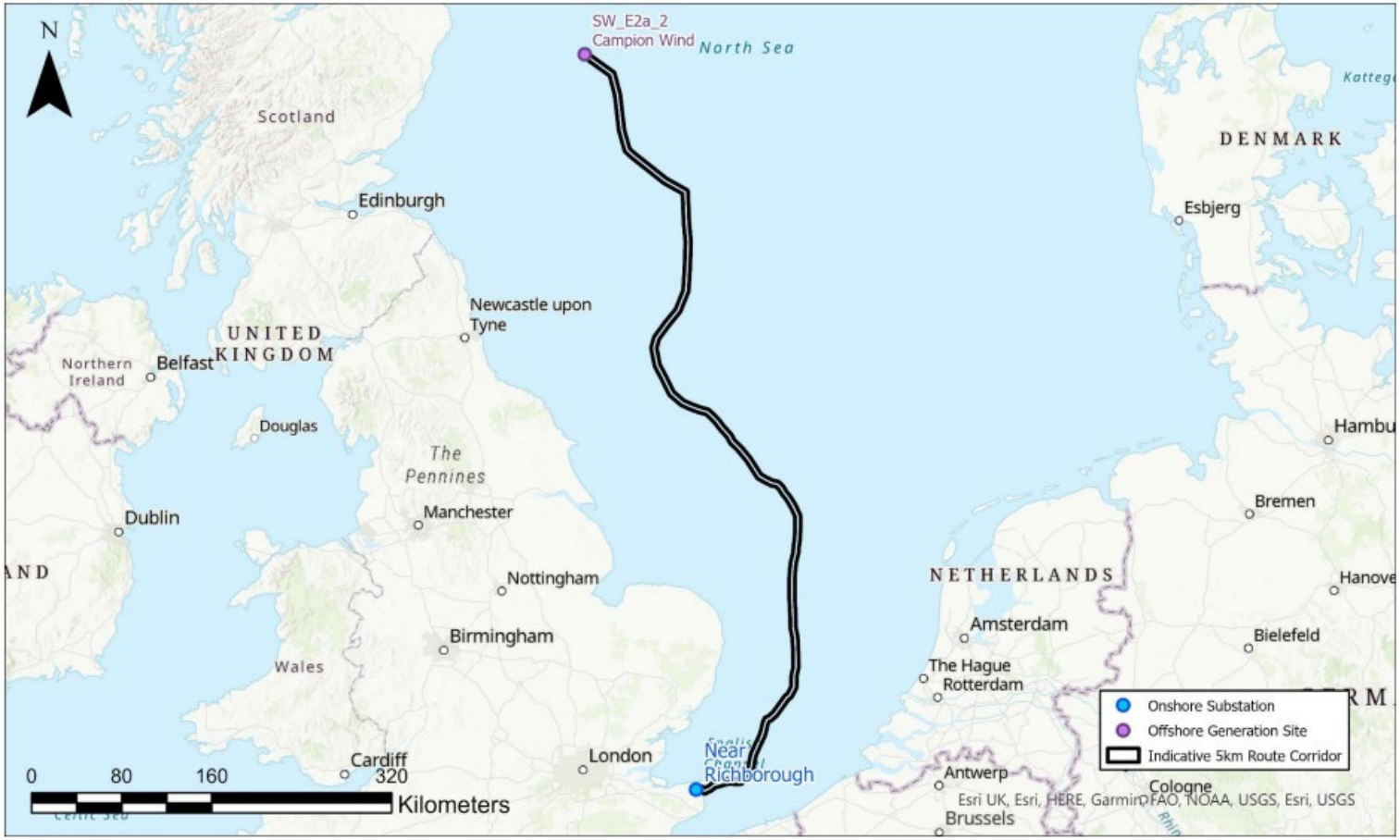


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There is also an oil/gas well within the route corridor, but this can be avoided. There are no other identified material assets or infrastructure within the 5km indicative corridor. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, known wreck locations, registered battlefields, historic MPAs, Conservation Areas, Scheduled Monuments or listed buildings within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
There are no identified cumulative and in combination constraints identified, although interaction with turbine siting and inter-array cables will need to be considered at DND stage.				

SW_E2a_2 - Richborough						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E2a_2 Campion	Richborough	809	2000	2 DC	1	Y – HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Sandwich Bay SAC (designated for dune habitats) is within the offshore, landfall and onshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and damage to habitats (-2). The Thanet Coast and Sandwich Bay SPA (designated for European golden plover, ruddy turnstone, and little tern) and Ramsar site (designated for wetlands, turnstone, four wader species: ringed plover, golden plover, grey plover and sanderling, as well as Lapland bunting) are within the offshore, landfall and onshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Designated sites with features that have been identified as particularly sensitive to pressures associated with cabling can be avoided. The Thanet Coast SAC (designated for reefs and sea caves) is within the offshore and landfall route corridor but can be avoided by the cable route. There may be potential for short-term indirect impacts on the protected features of this site during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-2), with designated features identified as highly sensitive to impacts from cable installation. The Thanet Coast MCZ (designated for subtidal chalk, cliffs and coves, and stalked jellyfish) is within the offshore and landfall route corridor. There may be potential for short-term indirect impacts on the protected features of this site during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-2), with designated features identified as sensitive to highly sensitive to impacts from cable installation. Goodwin Sands MCZ (designated for sand and coarse sediment features, rock features (likely chalk) and biogenic reefs, harbour and grey seal) is within the offshore route corridor but	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
can be avoided, avoiding the potential for direct impacts within the site. There may be potential for short-term indirect impacts on the protected features of this site during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-2), with designated features identified as sensitive to impacts from cable installation. The Sandwich Bay to Hacklinge Marshes SSSI (designated for several plant, invertebrate and wintering bird species) is within the offshore, landfall and onshore route corridor and cannot be avoided. There is potential for direct and indirect impacts on the protected features within this site in the short-term construction and decommissioning phases and during cable maintenance activities (-2). The Thanet Coast and Sandwich Bay IBA is also within the landfall and onshore route corridor and cannot be avoided and there is potential for direct and indirect impacts on bird species and supporting habitat within this area in the short-term construction and decommissioning phases and during cable maintenance activities. There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall and known locations of Annex I sandbank within the offshore route corridor; areas offshore may not be possible to avoid. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban areas of Ramsgate, St Lawrence and Cliffsend are within the route corridor at landfall and onshore and the urban area of Minster is also within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is an unavoidable RYA boating area in the offshore and landfall corridors and also two bathing water sites within the landfall corridor, which can be avoided within the route corridor. There is potential for short-term, negative effects on the local population, such as noise and disturbance and short-term water quality impacts to the RYA (direct) and bathing areas (indirect) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect

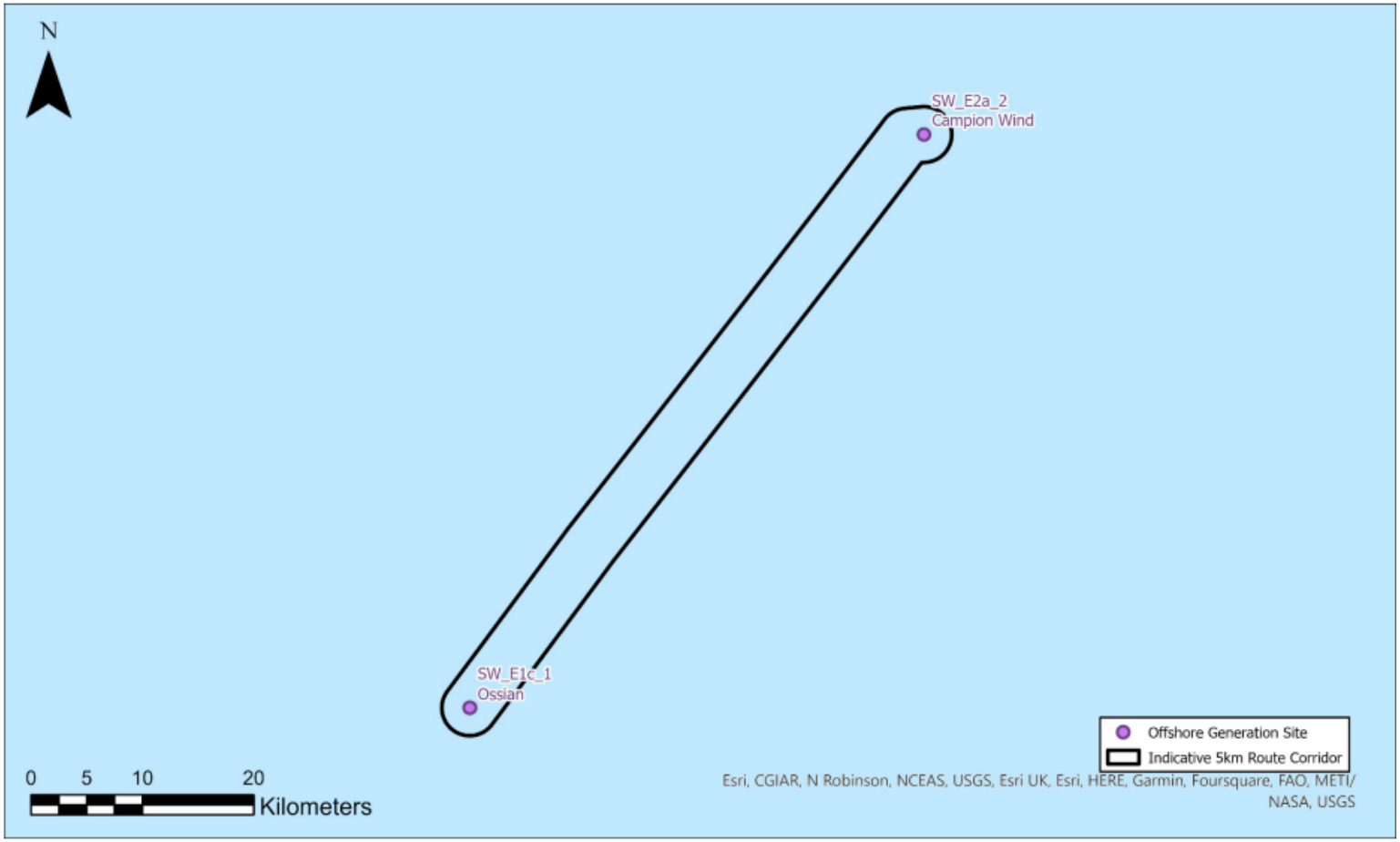
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and sandbanks, and the Sandwich Bay to Hacklinge Marsh SSSI within the 5km indicative route corridor, and these cannot be avoided (-2). In addition, there are dredge and spoil dumping sites and a historic landfill site, however, these can potentially be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are areas identified as excellent quality agricultural land within the onshore route corridor but can likely be avoided (-1). The other agricultural lands are primarily of good quality containing small patches of poor land along the coast (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative onshore route corridor and at landfall, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall that cannot be avoided, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the landfall and onshore route corridor; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore and there are areas benefitting from flood defences onshore, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor. There are known locations of Air Quality Management Areas (AQMA) within the onshore route corridor, however these can be avoided (-1). There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There are no explicit Annex 1 Saltmarshes identified but there are saltmarsh habitats listed within two of the Ramsar sites which cannot be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (809.5 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as offshore cables, pipelines, oil/gas wells, the Thanet OFTO cable, high-density shipping areas, the Staxton Military Area, traffic separation zones in the vicinity of Richborough and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, a railway line and numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (five oil/gas installations), the East Anglia North Tranche 2 wind farm, two dredging areas, two designated anchorage areas, five dredge and spoil dumping sites, Ramsgate Port, two marinas (Ramsgate Port and Royal Harbour Marina Ramsgate), onshore infrastructure (National Grid infrastructure) and four urban areas (Ramsgate, St. Lawrence, Cliffsend and Minster) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH)	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The potential for significant negative effects on CH can be avoided within the route corridor. There are no WHS, registered battlefields, historic MPAs, Parks and Gardens or Conservation Areas within the 5km indicative route corridor. There are 127 known wreck locations within the offshore route corridor and four within the route corridor at landfall. There are also 116 listed buildings within the 5km indicative route corridor at landfall and 174 listed buildings and three Scheduled monuments within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) The potential for direct negative impacts on L can be avoided within the route corridor. There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban areas of Ramsgate, St Lawrence and Cliffsend are within the route corridor at landfall and onshore and the urban area of Minster is also within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The landfall location at Ebbsfleet is spatially constrained, and there are existing cables present at landfall. Within the offshore corridor, there is a potential opportunity for coordination with other routes to South East England. The route corridor crosses HND Routes into Birkhill Wood. Offshore the link crosses HND links to Creyke Beck, PA_1 to Hawthorn Pit, SW_E1a to R4_1, SW_E1a to R4_2, HNDFUE link to EACN and INTOG routes Cedar to Branxton, Cedar to Fetteresso, Cenos to Lackenby, Cenos to Fetteresso and Cenos to Hawthorn Pit. The offshore route passes through a number of gaps between environmental designations and has been developed to avoid the Shallow Sands MCZ, Dogger Bank SAC and North Norfolk Sandbanks and Saturn Reef SAC. The offshore route also passes close to a number of existing energy generation sites and follows a deep-water navigation channel to avoid other				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
technical and environmental constraints. The Thanet Offshore Wind Farm connection and Nemo interconnector cables are located in the vicinity of landfall.				

SW_E2a_2 – SW_E1c_1						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E2a_2 Campion	SW_E1c_1 Ossian	66	2000	4 AC	4	Y – HNDFUE ScotWind
Overview of Route						

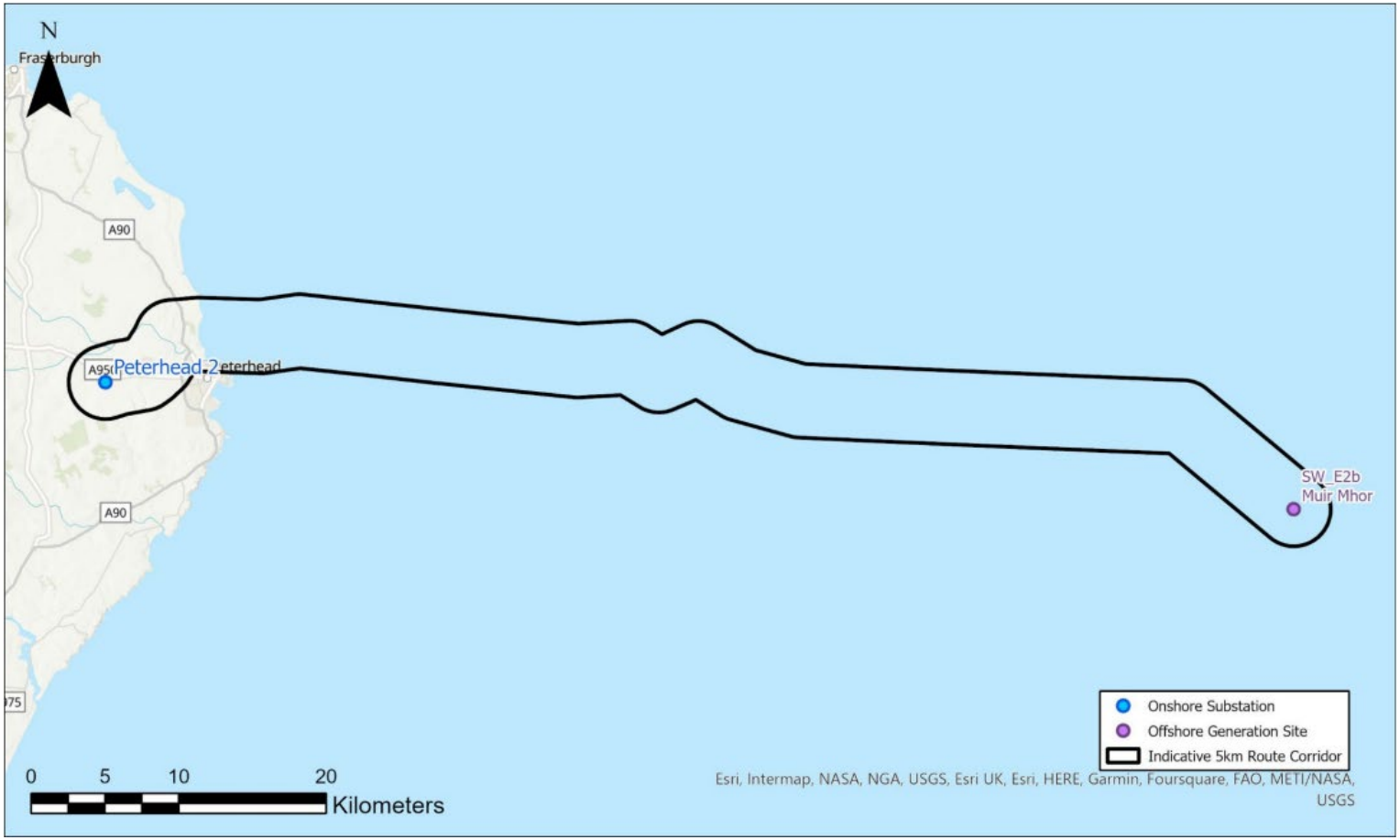


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (1 oil/gas well) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There are no other identified material assets or infrastructure within the 5km indicative corridor. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, known wreck locations, registered battlefields, historic MPAs, Conservation Areas, Scheduled monuments or listed buildings within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor, which is located entirely offshore.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
There are no identified cumulative and in combination constraints.				

SW_E2b – Peterhead2/DCSS						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E2b (Muir Mhor)	Peterhead2/DCSS	85	1000	2 AC	2	Y – HNDFUE ScotWind
Overview of Route						



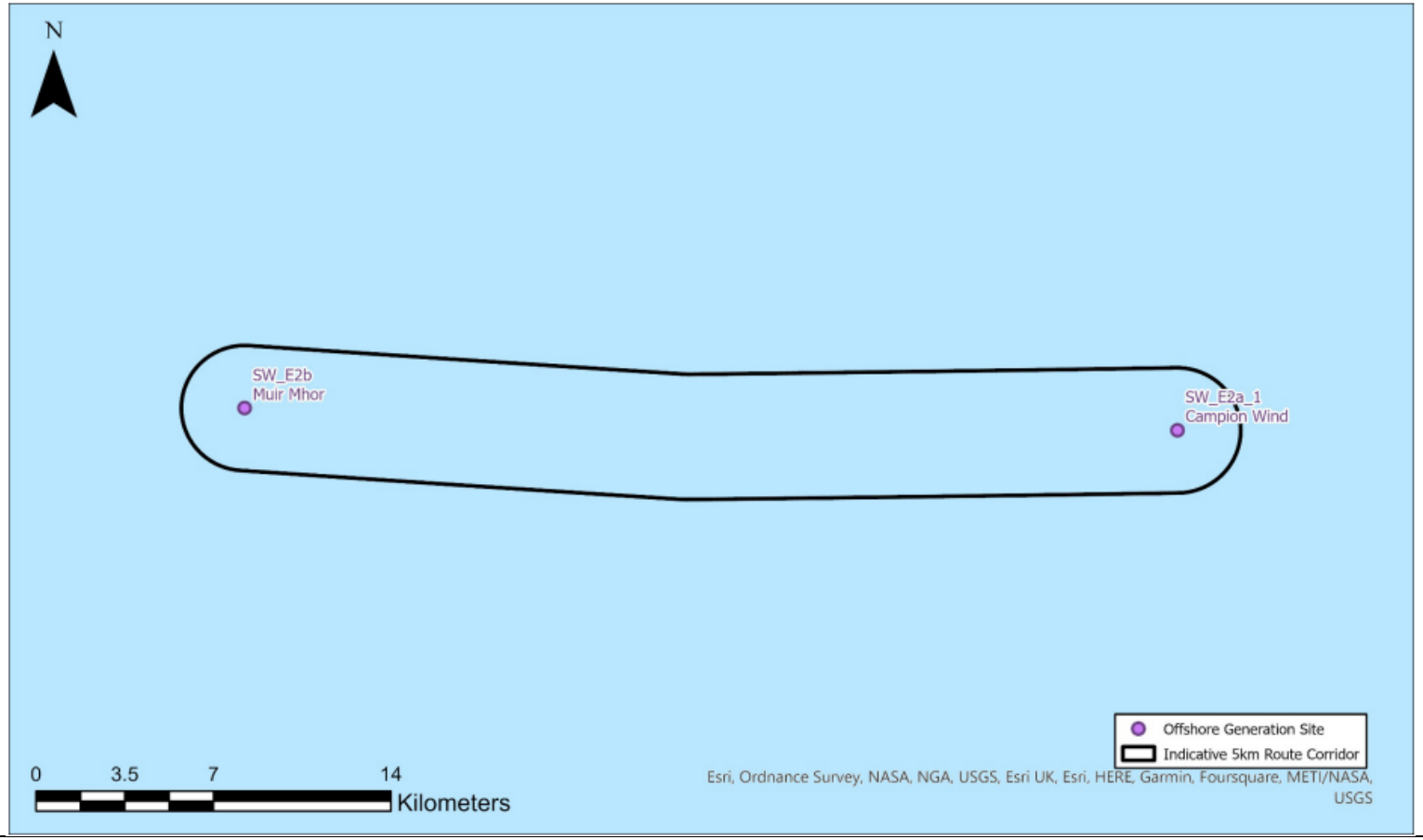
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). There may be a requirement for rock protection within the site owing to a cable crossing by the cable route. The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat, however the potential for long-term effects on habitats will need to be considered and avoided at the detailed design stage. The Turbot Bank MPA (designated for sandeels) is within the 5km indicative offshore route corridor. This site can be avoided by the cable route, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected feature of this site, which is known to be sensitive to pressures associated with cabling activities, during the construction and decommissioning phases and during cable maintenance activities (-2). There are known locations of Annex I reef within the offshore route corridor and at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity. There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban area of Peterhead is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL)	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and dredge and spoils sites within the 5km indicative route corridor, but both can be avoided, avoiding the potential for direct impacts (-1). However, the Southern Trench MPA within the route corridor cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are rivers within the route corridor onshore that will either need to be avoided or crossed within the route corridor, and there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones onshore and dredge and spoil dumping sites offshore within the route corridor; these can be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two gas pipelines and one offshore cable will need to be crossed. High-density shipping areas and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (16 oil/gas wells, one gas pipeline and two offshore cables), a dredge spoil site, Peterhead Port, onshore infrastructure (two National Grid gas pipelines) and the Peterhead urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 12 known wreck locations within the offshore route corridor and one known wreck location at landfall, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument within the route corridor at landfall and five Scheduled monuments and one listed building within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) The potential for direct negative impacts on L can be avoided within the route corridor. There are no AONBs, National Parks, Heritage Coasts, or National Trust lands within the 5km indicative route corridor. The urban area of Peterhead is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. A part of the Formartine and Buchan Way National Trail is within the onshore route corridor, however, can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for short-term indirect visual impacts within this area during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The landfall is shared with the HND and HNDFUE routes from SW_NE7 (Marram Wind). This landfall and onshore route may also be common with at least one proposed HVDC east coast boot strap. The Peterhead2/DCSS area is also the proposed tie in for SW_NE6 and SE_NE8 OWFs plus the SSEN HVDC boot strap to Spittal and thus could become very congested if all development is not co-ordinated. Offshore the route crosses HND route SW_NE7 to SW_E1a and INTOG routes Aspen to Fetteresso, Cenos to Peterhead, Aspen to Newmachar and Aspen to Tealing.				

SW_E2b - SW_E2a_1						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E2b Muir Mhor	SW_E2a_1 Campion	36	2500	5 AC	5	Y – HNDFUE ScotWind
Overview of Route						

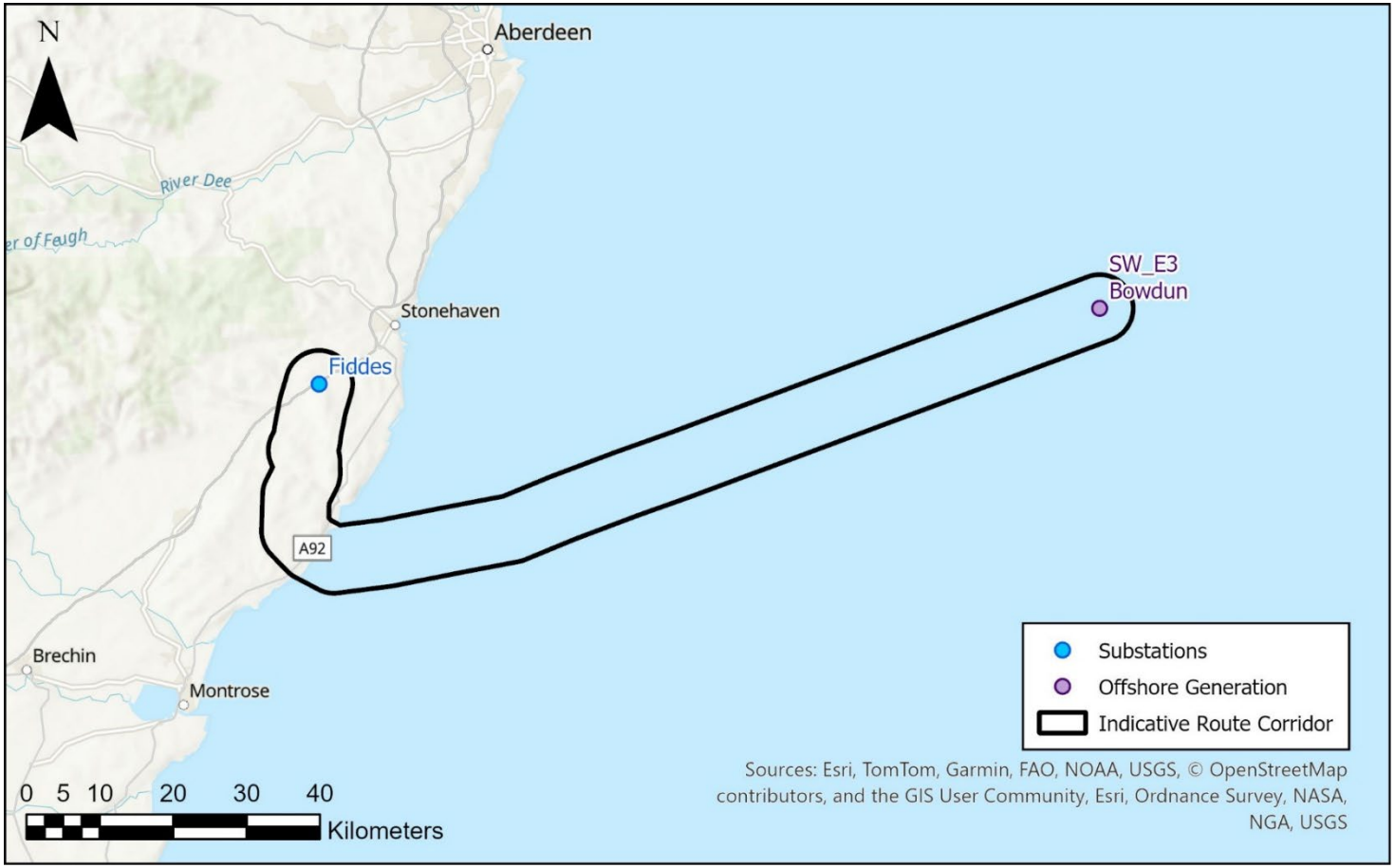


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There are no other identified material assets or infrastructure within the 5km indicative corridor. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Conservation Areas, Scheduled monuments or listed buildings within the 5km indicative route corridor, which is located entirely offshore. There is one known wreck location within the offshore route corridor, however, this can be avoided by the cable route, avoiding the potential for direct negative impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor, which is located entirely offshore.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
There are no identified cumulative and in combination constraints.				

SW_E3 - Fiddes						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E3 Bowdun	Fiddes	75	1050	3 AC	3	Y – HNDFUE ScotWind
Overview of Route						



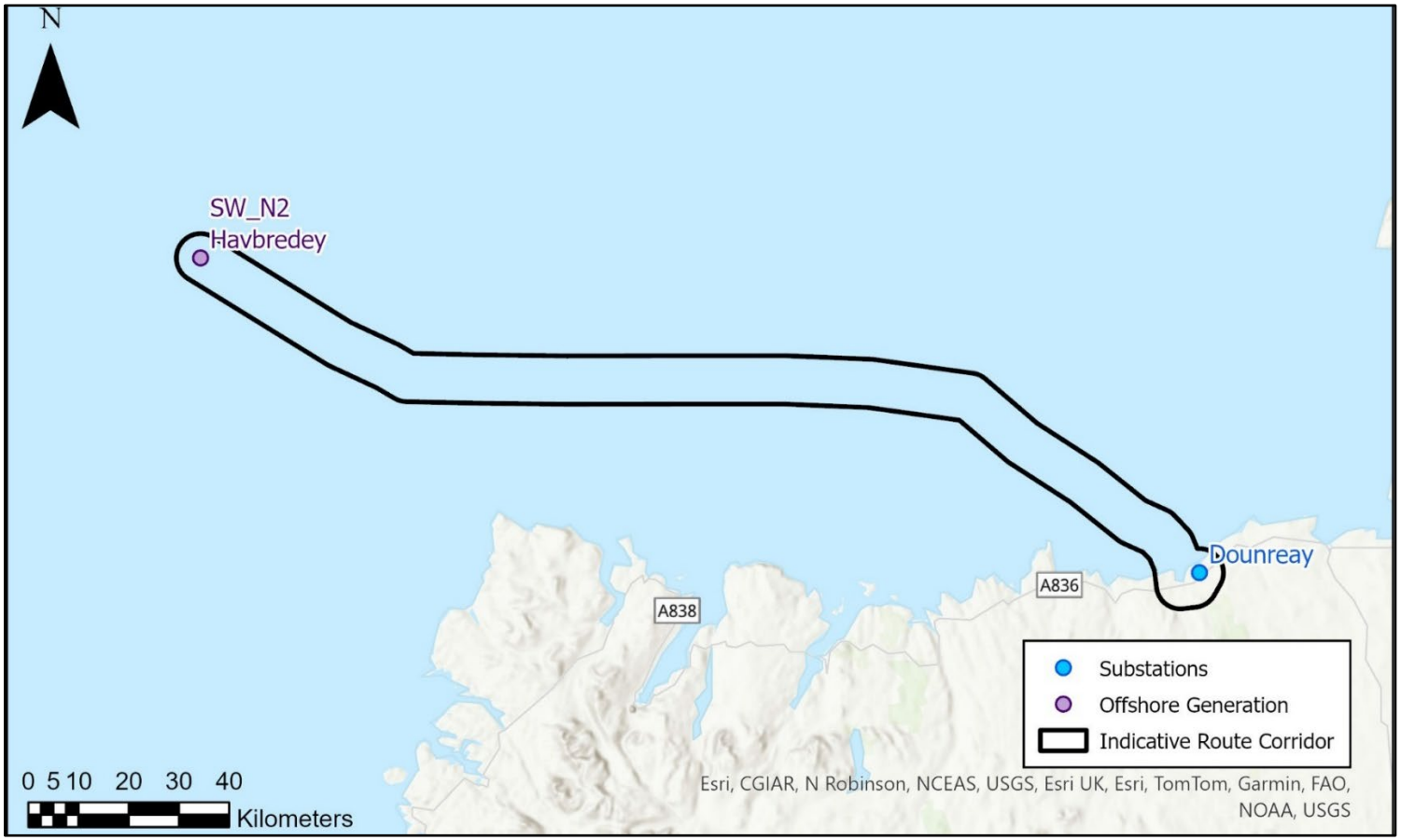
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites (SACs, SPAs, HPMAs, Ramsar, MCZs, SSSIs) within the 5km indicative offshore route corridor or within the route corridor at landfall and onshore. There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that may not be possible to avoid. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature in the footprint of infrastructure. There are known locations of ancient woodland within the onshore route corridor, however these can be avoided by the cable route within the 5km indicative corridor. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Inverbervie is within the route corridor at landfall and within the onshore route corridor. However, this area can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, however, there are Annex 1 reefs within the 5km indicative route corridor, that cannot be avoided (-2). The Burn of Benholm SSSI is also within the route corridor but can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There is a small area identified as very high-quality agricultural land within the onshore route corridor, but this can be avoided (-1). The agricultural lands are primarily good quality with small patches of moderate to poor land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W)	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on W within the route corridor. There are rivers within the route corridor onshore that will need to be crossed, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; these will need to be crossed, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one oil/gas well), onshore infrastructure (two National Grid gas pipelines), a railway line, and the Inverbervie urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) The potential for significant negative effects on CH can be avoided within the route corridor. There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 14 known wreck locations within the offshore route corridor and one within the route corridor at landfall. There is also one Scheduled monument within the route corridor at landfall and five Scheduled monuments and one listed building within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. The Arbuthnott House Parks and Garden is within the onshore route corridor. This site can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The potential for direct negative impacts on L can be avoided within the route corridor. There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban area of Inverbervie is within the route corridor at landfall and within the onshore route corridor. However, this area can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within this higher populated area.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
This landfall is shared with the HND SW_E1a to Fetteresso/Fiddes route. Both offshore and onshore SW_E3 to Fiddes interacts with INTOG route Aspen to Fetteresso, Cedar to Fetteresso and Cenos to Fetteresso, as well as crossing Aspen to Tealing offshore. The HNDFUE connections from SW_E2a_1 and SW_E2a_2 to Fiddes also overlap with this landfall and onshore route.				

SW_N2 – Dounreay						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_N2 Havbredey	Dounreay	137.8	1500	3 AC	3	Y - HNDFUE ScotWind
Overview of Route						



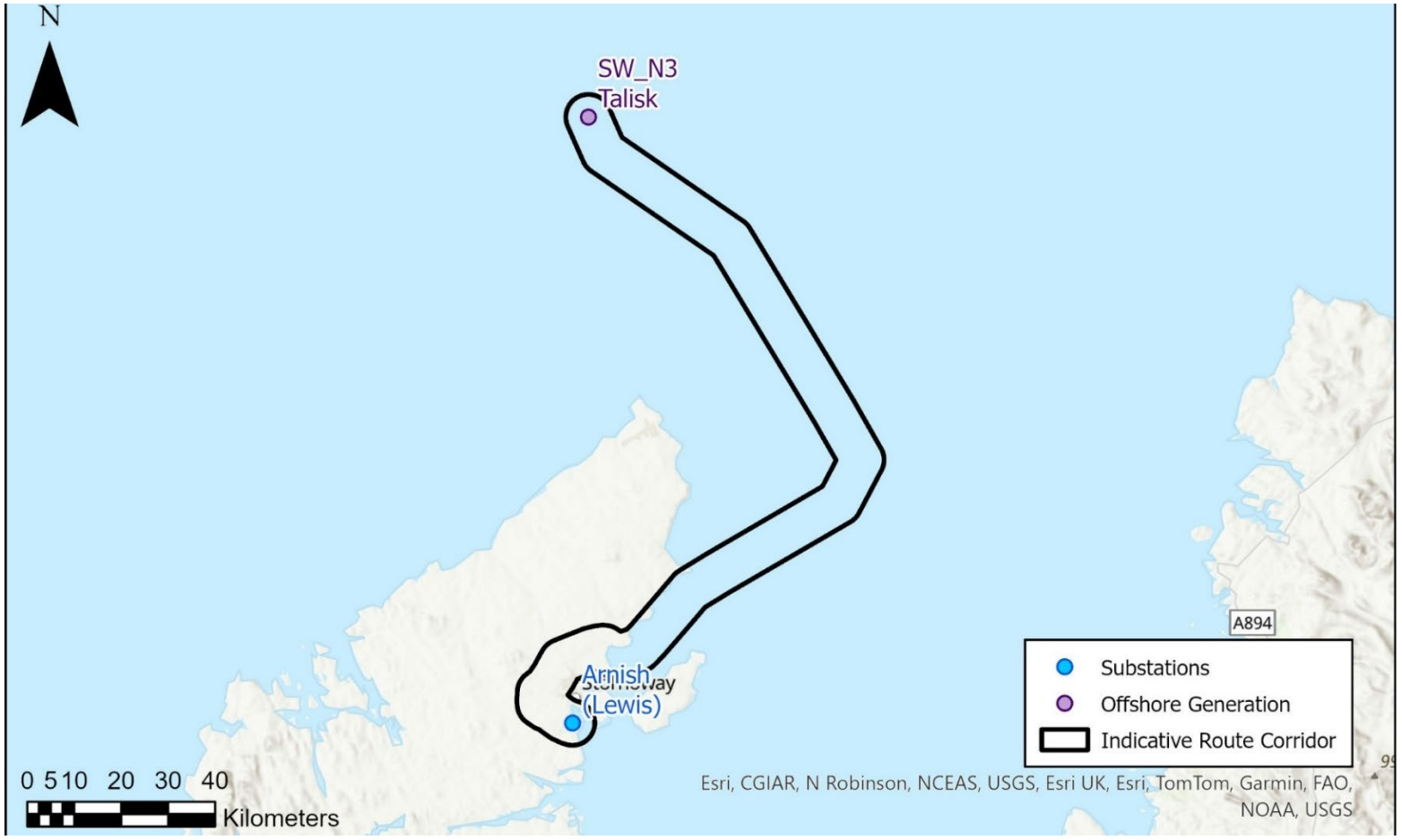
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) is within the offshore route corridor and the route corridor at landfall; there is limited scope to avoid this site, however, the cable length within the site can be minimised. There is potential for short-term direct and indirect impacts on designated species within the site during the construction and decommissioning phases or during cable maintenance activities (-2). The Sandside Bay SSSI (designated for dune habitat) is within the offshore and landfall route corridor and there is limited scope to avoid this site. There is potential for short-term direct and direct impacts on designated habitat within the site during the construction and decommissioning phases or during cable maintenance activities (-2). The River Thurso SAC (designated for fish species including Atlantic salmon) cannot be avoided by the route corridor and would need to be crossed. There is potential for significant short-term direct and indirect impacts within this site during the construction and decommissioning phases and during cable maintenance activities (-2). The Red Point Coast SSSI (designated for cliffs and breeding guillemot) is within the route corridor at landfall but can be avoided. There are also numerous designated sites within the onshore route corridor that can be avoided. These are the Caithness and Sutherland Peatlands SAC (designated for freshwater and upland habitats and species), Broubster Leans SAC (designated for wetland habitat), Caithness and Sutherland Peatlands SPA (designated for breeding populations of black-throated diver, common scoter, dunlin, golden eagle, golden plover, greenshank, hen harrier, merlin, red-throated diver, short-eared owl, wigeon and wood sandpiper), Caithness and Sutherland Peatlands Ramsar site, Caithness Lochs SPA (designated for non-breeding populations of Greenland white-fronted goose, Greylag goose, and Whooper swan), Caithness Lochs Ramsar site, Beinn Freiceadain and Ben Dorrery SSSI (designated for upland habitats), Broubster Leans SSSI (designated for wetlands and breeding birds), East Halladale SSSI (designated for blanket bog and breeding birds), Loch Calder SSSI (designated for non-breeding birds), Loch Caluim Flows SSSI (designated for blanket bog and breeding birds), and Westfield Bridge SSSI (designated for grassland and fen). There is potential for short-term indirect impacts on the designated features of these sites during the construction and decommissioning phases and during cable maintenance activities (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that may not be possible to avoid (-2). There is potential for direct and indirect impacts on these habitats during construction and decommissioning, which could be minimised through micro-routing; direct	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
impacts have the potential to be long-term to permanent in nature. There are areas of ancient woodland within the onshore route corridor, however these can be avoided. The Caithness Cliffs IBA is within the route corridor at landfall, and the Caithness and Sutherland Peatlands IBA, Caithness Lochs IBA, and Broubster Leans RSPB Reserve are within the onshore route corridor; however, all these areas are avoidable. There may be potential for short-term indirect effects within these areas (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) Potential for significant negative effects on PHH can be avoided within the route corridor. The urban area of Dounreay is within the route corridor at landfall, and within the onshore route corridor. However, this area can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs within the 5km indicative route corridor along the coastline, which cannot be completely avoided, but with a 500m gap there is a possibility for micro routing, avoiding the potential for direct impacts (-2). The Red Point Coast SSSI is present at landfall but can be avoided, avoiding the potential for direct impacts (-1). There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of good quality with other areas of moderate and poor quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor at landfall and onshore, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the route corridor at landfall and onshore; at landfall there is limited scope to avoid these and they cannot be avoided onshore, therefore there is potential for temporary	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the landfall and onshore route corridor; there is potential to avoid these at landfall, but these cannot be avoided onshore, therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as the Cape Wrath Military Area and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, a railway line and numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided entirely. There is offshore infrastructure (diffuser), a proposed wind farm site, two proposed energy generation cables and the Dounreay urban area are located within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 11 known wreck locations within the offshore route corridor and one within the route corridor at landfall. There are also eight Scheduled monuments within the route corridor at landfall and 45 within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified sensitive landscape areas within the route corridor. The settlement of Dounreay is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The HND links SW_N4 to Dounreay, SW_N4 to Spittal and SW_N1 to Dounreay landfall in the vicinity of Sandside Bay. There could also be competition at Sandside Bay with the proposed Orkney-Dounreay link and the Highland Wind demo site cabling, although these projects are understood to be landfalling east of Sandside Bay which should avoid any conflict.				

SW_N3 - Arnish						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_N3 (Talisk)	Arnish	102	500	1 AC	1	Y - HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Inner Hebrides and the Minches SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of harbour porpoise and damage to supporting habitat (-2). The cable distance through the site is minimised, however potential impacts and mitigation will need to be considered at the detailed design stage. The North-East Lewis MPA (designated, in part, for Risso's dolphin and sand eels) is within the route corridor offshore and at landfall and cannot be avoided by the cable route. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated species and damage to habitat (-2). Risso's dolphins and sandeels have been identified as sensitive to pressures associated with cabling activities. Potential impacts and mitigation will need to be considered at the detailed design stage. The Lewis Peatlands SAC (designated for bog, lake and heathland habitats and otter species) and the Lewis Peatlands SPA (designated for breeding Black-throated diver, Dunlin, Golden Eagle, Golden plover, Greenshank, Merlin and Red-throated diver) and Ramsar site are within the onshore 5km indicative route corridor but can be avoided, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities (-2), which will need to be considered at the detailed design stage. The Gress Saltings SSSI (designated for saltmarsh) is within the offshore route corridor, while the Tong Saltings SSSI (designated for a breeding bird assemblage, mudflats, saltmarsh and sand dunes) is within the route corridor at landfall and onshore. However, both sites can be avoided by the cable route within the cable corridor. The potential for indirect impacts on these sites will need to be considered at the detailed design stage (-1). The Stornoway to Back, Lewis IBA is within the route corridor at landfall and onshore, while the Lewis Peatlands IBA is also within the onshore route corridor. The cable routing distance within these areas can be minimised but they cannot be completely avoided. There is potential for short-term direct and indirect impacts on bird species and supporting habitats within the construction and decommissioning phases and during cable maintenance activities (-1). There are known locations of Annex I reef within the offshore route corridor and at landfall and known locations of Annex I saltmarsh within the onshore route corridor, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-	-2	0	0	Direct & Indirect

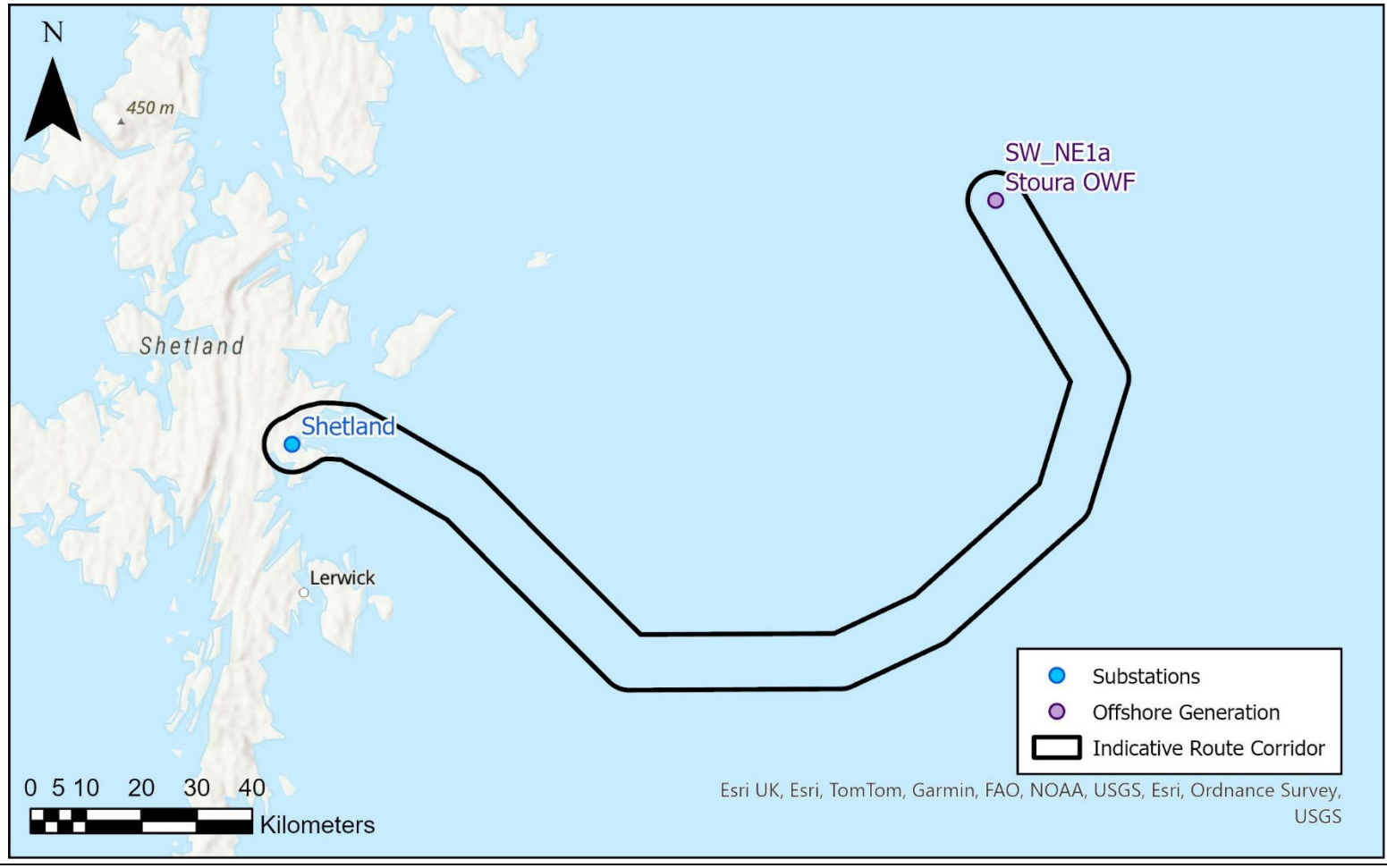
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
term construction and decommissioning phases and during any cable maintenance activities depending on proximity and impact pathways (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) Potential for significant negative effects on PHH can be avoided within the route corridor. The urban areas of Bac and Tunga are within the route corridor at landfall, and the urban areas of Stornoway, Bac and Tunga are within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs within the 5km indicative route corridor, which can be avoided, reducing the potential for direct impacts. The North-east Lewis MPA is also within the route corridor and cannot be avoided. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure (-2). There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of moderate and poor quality. There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor at landfall and onshore, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the route corridor at landfall and onshore, there is limited scope to avoid these at landfall, and these cannot be completely avoided within the route corridor, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the landfall and onshore route corridor; there is potential to avoid these flood zones at landfall, but	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
there is limited scope to avoid those onshore, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the onshore route corridor, however these can be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works along the extensive cable route length during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as a high-density fishing area is located within the offshore portion of the 5km indicative route corridor and cannot be avoided. Additionally, roads within the onshore portion of the 5km indicative route corridor cannot be avoided entirely. There is offshore infrastructure (one potentially unused cable), a designated anchorage area, Stornoway Port, Stornoway Marina and three urban areas (Stornoway, Bac and Tunga) within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. Potential for positive effects on MA from the facilitation of new renewable energy infrastructure.	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Conservation Areas or listed buildings within the 5km indicative route corridor. There are two known wreck locations within the offshore route corridor, however, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There are four Scheduled monuments within the onshore route corridor, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. The Lews Castle and Lady Lever Park Garden and Designed Landscape is within the onshore route corridor. This site can be avoided by the cable route within the corridor, avoiding the potential for direct impacts within this site. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban areas of Bac and Tunga are within the route corridor at landfall, and the urban areas of Stornoway, Bac and Tunga are within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The HND SW_N4 to Arnish and the Arnish to Beauly HVDC link are two projects that may be competing for space with the HNDFUE SW_N3 to Arnish link. The route may be completing with space with the HNDFUE route SW_N2 to Arnish at landfall and onshore. There is also a proposal for a major housing development at Newmarket on the northern edge of Greater Stornoway which may impact on the onshore cable route around Stornoway.				

SW_NE1a - Shetland Hub						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE1a (Stoura OWF)	Shetland Hub	112	500	2 AC	2	Y - HNDFUE ScotWind
Overview of Route						

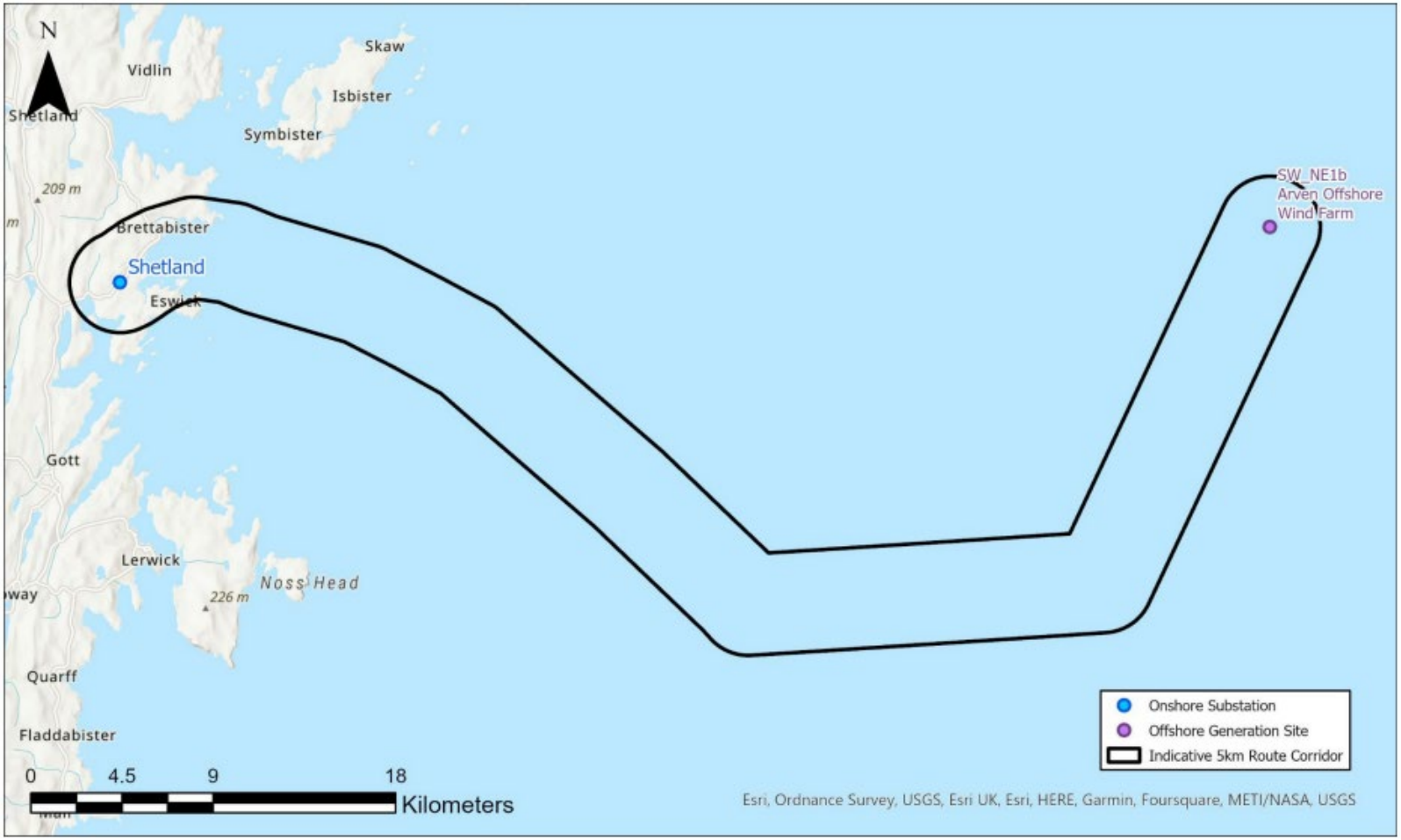


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The East Mainland Coast, Shetland SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Designated bird species at this site are currently in Favourable condition, however red-throated diver have been identified as sensitive to pressures associated with cabling activities. There are known locations of Annex I reef within the offshore route corridor and the route corridor at landfall that cannot be avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature. There is known high density of grey seals within the route corridor at landfall. This area cannot be avoided and there is potential for direct and indirect impacts on the species in the short-term construction and decommissioning phases and during cable maintenance activities including damage, disturbance and displacement, which will need to be considered at the project stage (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs within the 5km indicative route corridor that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of moderate to poor quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, there is limited scope to avoid these, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided onshore but there is limited scope to avoid these at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one offshore pipeline (Gas Export (Sigre) Firths Vow to MCP01) and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) The potential for significant negative effects on CH can be avoided within the route corridor. There are no WHS, registered battlefields, historic MPAs, Parks and Gardens, Conservation Areas or listed buildings within the 5km indicative route corridor. There are three known wreck locations within the offshore route corridor, however these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There are also 16 Scheduled monuments within the 5km indicative route corridor at landfall and eight within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor. In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route may be competing for space with other HNDFUE projects, SW_NE1b to Shetland, SW_NE1c to Shetland and Shetland to Blackhillock link.				

SW_NE1b - Shetland Hub						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE1b Arven	Shetland Hub	74	1800	4 AC	4	Y - HNDFUE ScotWind
Overview of Route						

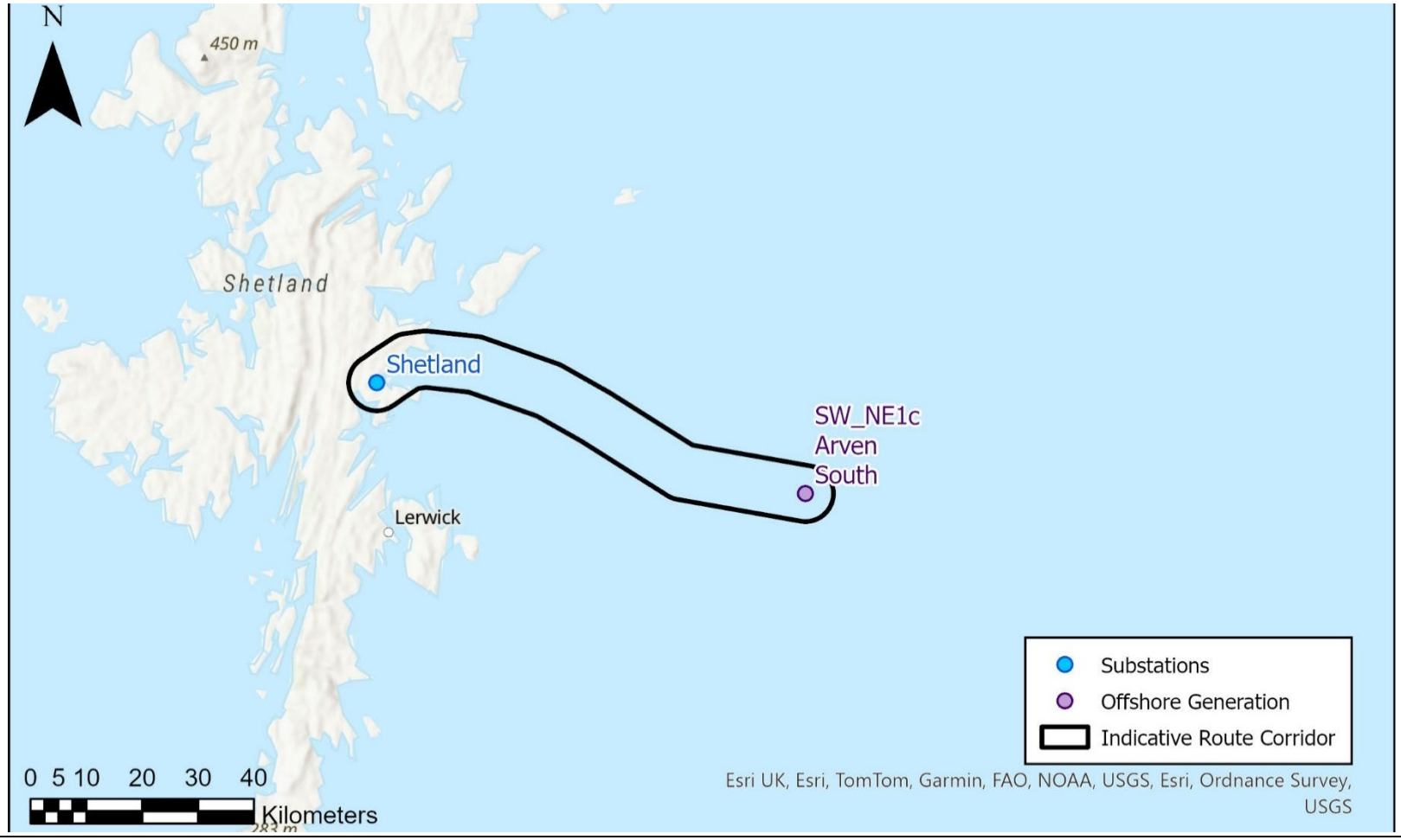


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The East Mainland Coast, Shetland SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Designated bird species at this site are currently in Favourable condition, however red-throated diver have been identified as sensitive to pressures associated with cabling activities. There are known locations of Annex I reef within the offshore route corridor and the route corridor at landfall that cannot be avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. There is known high density of grey seals within the route corridor at landfall. This area cannot be avoided and there is potential for direct and indirect impacts on the species in the short-term construction and decommissioning phases and during cable maintenance activities including damage, disturbance and displacement, which will need to be considered at the project stage (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs within the 5km indicative route corridor that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of moderate to poor quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, with limited scope to avoid these; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided onshore but there is limited scope to avoid these at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one offshore pipeline (Gas Export (Sigre) Firths Vow to MCP01) and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) The potential for significant negative effects on CH can be avoided within the route corridor. There are no WHS, registered battlefields, historic MPAs, Parks and Gardens, Conservation Areas, known wreck locations or listed buildings within the 5km indicative route corridor. There are 16 Scheduled monuments within the 5km indicative route corridor at landfall and eight within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor. In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route may be competing for space with other HNDFUE projects, SW_NE1a to Shetland, SW_NE1c to Shetland and Shetland to Blackhillock link.				

SW_NE1c to Shetland Hub						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE1c (Arven South)	Shetland Hub	41	500	2 AC	2	Y - HNDFUE ScotWind
Overview of Route						

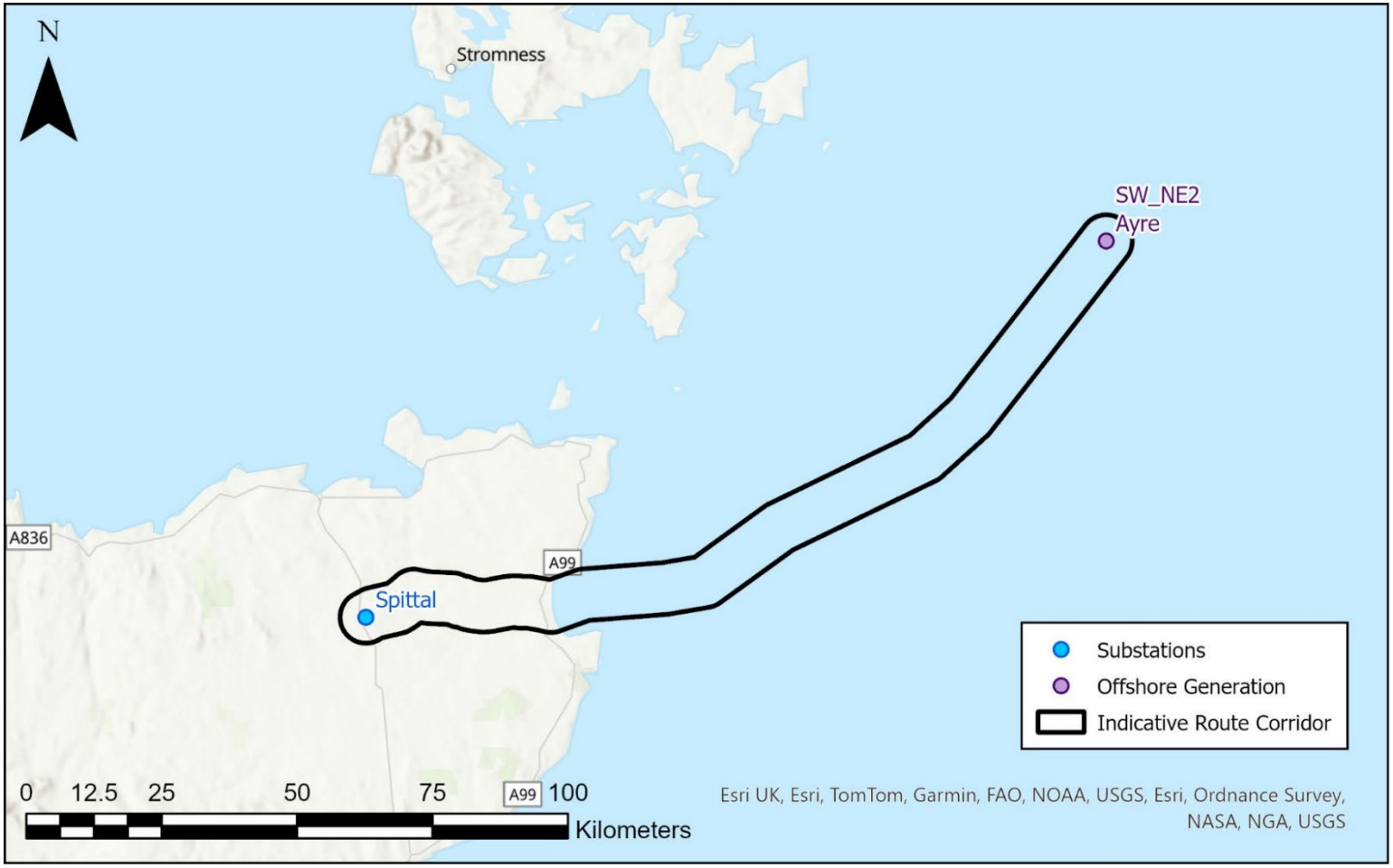


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The East Mainland Coast, Shetland SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Designated bird species at this site are currently in favourable condition, however red-throated diver have been identified as sensitive to pressures associated with cabling activities. There are known locations of Annex I reef within the offshore route corridor and the route corridor at landfall that cannot be avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. There is known high density of grey seals within the route corridor at landfall. This area cannot be avoided and there is potential for direct and indirect impacts on the species in the short-term construction and decommissioning phases and during cable maintenance activities including damage, disturbance and displacement, which will need to be considered at the project stage (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs within the 5km indicative route corridor, which cannot be completely avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are no identified areas of excellent agricultural land within the onshore route corridor. The agricultural lands are primarily moderate to poor quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, with limited scope to avoid these; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided onshore but there is limited scope to avoid these at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one offshore pipeline (Gas Export (Sigre) Firths Vow to MCP01) and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) The potential for significant negative effects on CH can be avoided within the route corridor. There are no WHS, registered battlefields, historic MPAs, Parks and Gardens, Conservation Areas or listed buildings within the 5km indicative route corridor. There is one known wreck location within the offshore route corridor, however this can be avoided by the cable route, avoiding the potential for direct negative impacts. There are also 16 Scheduled monuments within the 5km indicative route corridor at landfall and eight within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor. In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route may be competing for space with other HNDFUE projects, SW_NE1a to Shetland, SW_NE1b to Shetland and Shetland to Blackhillock link.				

SW_NE2 - Spittal						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE2 Ayre	Spittal	85	1050	3 AC	3	Y - HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Noss Head MPA (designated for horse mussel) is within the offshore 5km indicative route corridor but can be avoided, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected species of this site during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-2). The Loch of Wester SAC (designated for lake habitat) and the Caithness Lochs SPA and Ramsar site (designated for non-breeding populations of Greylag goose, White-fronted goose and Whooper swan) are within the route corridor at landfall and onshore. Loch Watten SAC (designated for lake habitat), Caithness and Sutherland Peatlands SAC (designated for freshwater and wetland habitats and species), Caithness and Sutherland Peatlands SPA (designated for breeding populations of Black-throated diver, Common scoter, Dunlin, Golden eagle, Golden plover, Greenshank, Hen harrier, Merlin, Red-throated diver, Short-eared owl, Wigeon and Wood sandpiper) and Caithness and Sutherland Peatlands Ramsar (designated for breeding populations of Dunlin and Greylag goose, breeding bird assemblage and blanket bog habitat) are also within the onshore route corridor. All these sites are avoidable by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-2). The Loch of Wester SSSI (designated for lake habitat and Whooper swan) is within the route corridor at landfall and onshore, while the Loch of Winless SSSI (designated for fen habitat), Loch Scarmclate SSSI (designated for lake habitat and greylag goose), Loch Watten SSSI (designated for lake and fen habitats and greylag goose), Moss of Killimster SSSI (designated for blanket bog), Caithness and Sutherland Peatlands IBA and Caithness Lochs IBA are also within the onshore route corridor. All these sites are avoidable by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage There are known locations of Annex I reef within the offshore route corridor and at landfall and known locations of Annex I saltmarsh within the route corridor at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity and impact pathways. There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route. There is a known grey seal population within the	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
route corridor at landfall; this area can be avoided by the cable route, however, the potential for indirect impacts will need to be considered at the detailed design stage. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Banniskirk Quarry SSSI, Achanarras Quarry SSSI, Spittal Quarry SSSI, a landfill site and Annex 1 reefs are within the 5km indicative route corridor but can be avoided, avoiding the potential for direct impacts (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of good quality with smaller areas of moderate quality and poor quality (-1). There is potential for temporary negative effects due to loss or displacement of offshore sediment and onshore soils and long-term effects in the footprint of infrastructure.	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but these can be avoided, avoiding the potential for direct impacts. There are rivers onshore and at landfall that cannot be avoided, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the landfall and onshore route corridor; these can be avoided at landfall but there is limited scope to avoid those onshore, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the landfall route corridor, however these can be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA, an offshore cable and a pipeline which need to be crossed within the 5km indicative corridor. The Moray Firth Military Area and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, a railway line and numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided entirely. There is offshore infrastructure (cables), and a railway line located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are ten known wreck locations within the offshore route corridor and two known wreck locations at landfall, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument within the route corridor at landfall and 22 Scheduled monuments within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The HND links to Spittal will require infrastructure in the vicinity of the new Spittal sub-station and the proposed Peterhead-Spittal HVDC link could be competing for space at landfall and within the onshore route corridor. The sub-station site at Spittal is relatively lightly constrained although it is located in an open flat area with limited opportunity for screening.				

SW_NE3 – New Deer 2						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE3 (Stromar)	New Deer 2	146	1000	2 AC	2	Y - HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat. The designated site of Rosehearty to Fraserburgh Coast SSSI (designated for non-breeding Curlew, Eider, Turnstone and Purple sandpiper) is within the route corridor offshore and at landfall and is not possible to avoid, and there is potential for short-term direct and indirect impacts on the designated features during the construction and decommissioning phases and during cable maintenance activities (-2). The Rosehearty to Fraserburgh Coast IBA is also unavoidable by the cable route at landfall and there is potential for short-term direct and indirect impacts on the designated features during the construction and decommissioning phases and during cable maintenance activities. There are known locations of Annex I reef within the route corridor offshore and at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity (-1). There are areas of ancient woodland within the onshore route corridor, however these are avoidable by the cable route. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The large urban area of Fraserburgh is within the route corridor at landfall and onshore. However, this urban area can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is also the Fraserburgh (Tiger Hill) bathing water site within the landfall route corridor which can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Geology, Soils and Land Use (GSL) There is potential for negative effects on GSL within the route corridor. There are Annex 1 reefs within the 5km indicative route corridor, which can potentially be avoided (-1). Rosehearty to Fraserburgh Coast SSSI cannot be avoided and needs to be crossed (-2). In addition, the Southern Trench MPA within the route corridor cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of good quality with smaller areas of moderate quality and poor quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	*-2*	*0*	*0*	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor at landfall and onshore, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall that cannot be completely avoided, therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the landfall and onshore route corridor; these cannot completely be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as the Moray Firth Firing Military Area and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided entirely. There is offshore infrastructure (nine oil/gas wells), high-density shipping areas, the Sandhaven and Pitullie Harbour Marina, the Port of Fraserburgh and the Fraserburgh urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 14 known wreck locations within the offshore route corridor, however these are all avoidable by the cable route. There are also three Scheduled monuments within the route corridor at landfall and within the onshore route corridor, and one listed building at landfall and within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts or National Trust lands within the 5km indicative route corridor. The large urban area of Fraserburgh is within the route corridor at landfall and onshore. However, this urban area can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. The Formartine and Buchan Way National Trail is within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts during the construction and decommissioning phases, depending on proximity. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The offshore route through the Southern Trench MPA could be in competition with HNDFUE routes for SW_NE6 and SW_NE8 plus potentially the SSEN Peterhead to Spittal proposed HVDC link. Current landfall is located to the west of Fraserburgh to separate it from these other connections, and onshore routes differ as all others are connecting to the Peterhead area. The New Deer area is also the proposed tie in for the HND1 SW_NE4 connection and is also the general area for the various Moray OWF grid connections.				

SW_NE4 - New Deer						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE4 Caledonia	New Deer	90	550	2 AC	2	Y - HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat. There are known locations of Annex I reef within the offshore route corridor and at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity. There are areas of ancient woodland within the onshore route corridor, which may not be possible to avoid. There is potential for direct or indirect damage or permanent loss of areas of habitat within the direct cable route (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban areas of Banff and Whitehills are within the route corridor at landfall, while the Cuminestown urban area is within the onshore route corridor. However, these urban areas can be avoided, avoiding the potential for direct negative effects. There is also the Inverboyndie bathing waters located within the landfall corridor, which can be avoided (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and the Whitehills to Melrose Coast SSSI within the 5km indicative route corridor, but both can be avoided (-1). However, the Southern Trench MPA within the route corridor cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
land within the onshore route corridor. The agricultural lands are primarily of good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the route corridor at landfall and onshore. At landfall, rivers can be avoided, but onshore rivers must be crossed within the route corridor, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the landfall and onshore route corridor; these cannot be avoided, and there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as the Moray Firth Firing Military Area and high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided entirely. There is offshore infrastructure (a telecommunication cable, the Moray Offshore Wind Farm export cable and two oil/gas wells/diffusers), a designated anchorage area, a navigation dredging area, two marinas (Banff Harbour Marina and Whitehills Marina) and three urban areas (Cuminestown, Banff and Whitehills) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, listed buildings, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are ten known wreck locations within the offshore route corridor and one within the route corridor at landfall. There are also three Scheduled monuments within the route corridor at landfall and eight within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. The Duff House Parks and Garden is within the route corridor at landfall and the onshore route corridor, while Hatton Castle is also within the onshore route corridor. These sites can be avoided by cable routes within the corridor, avoiding the potential for direct impacts on these sites. There may be potential for short-term impacts on the setting of these heritage assets during the construction and decommissioning phases, depending on proximity to cable routes.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust, or National Trails within the 5km indicative route corridor. The urban areas of Banff and Whitehills are within the route corridor at landfall, while the Cuminestown urban area is within the onshore route corridor. However, these urban areas can be avoided, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The offshore route through Southern Trench MPA and onshore route assumed identical to the HND connection for the same windfarm. Landfall is shared with existing Moray windfarm connection which take a similar but parallel route to New Deer.				

SW_NE6 – Peterhead2/DCSS						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE6 Broadshore	Peterhead2/DCSS	90	1000	2 AC	2	Y – HNDFUE ScotWind
Overview of Route						



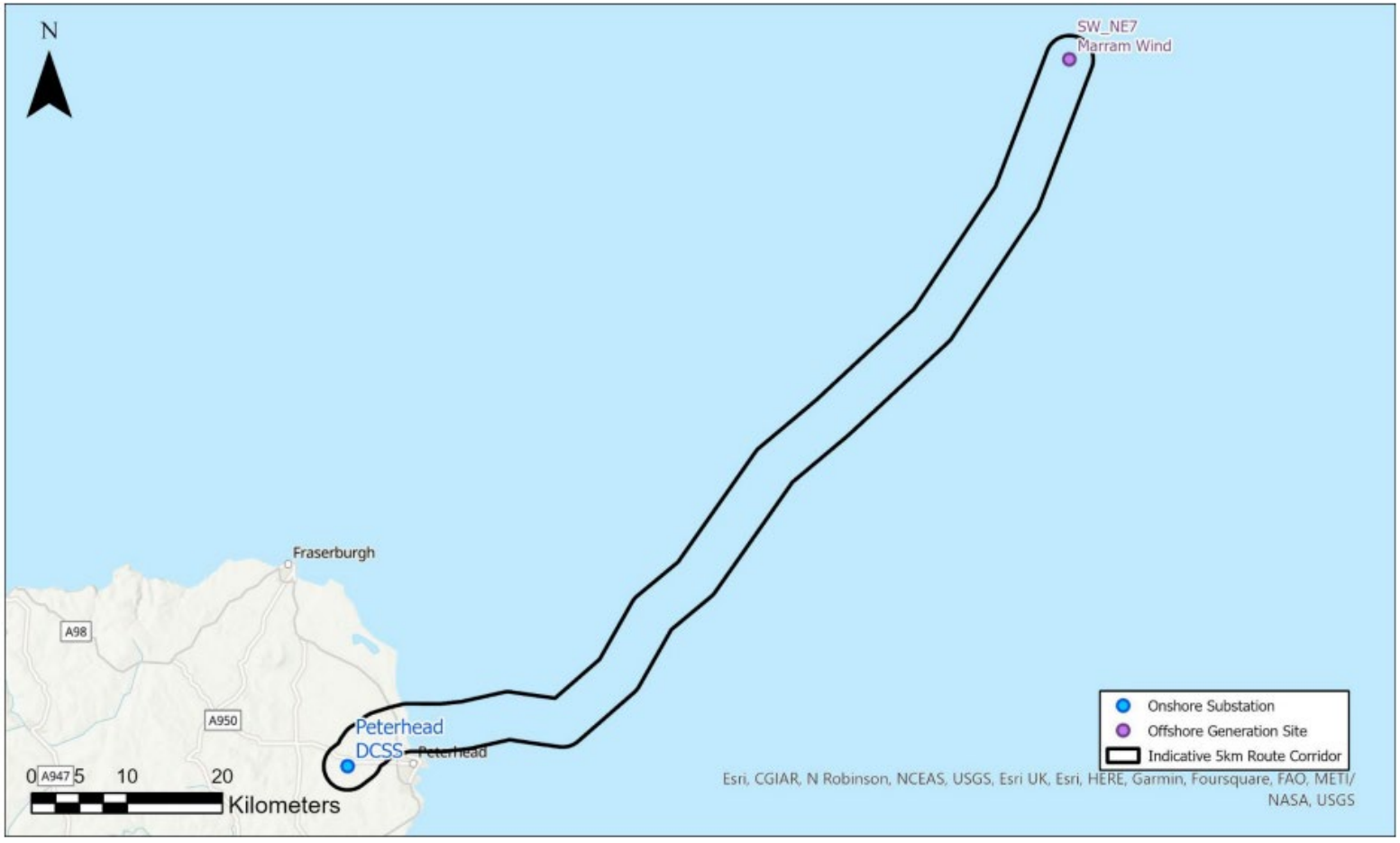
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat. The Loch of Strathbeg SPA (designated for goldeneye, whooper swan, greylag goose, pink-footed goose, Svalbard barnacle goose, teal, and sandwich tern, non-breeding waterfowl assemblage) is within the 5km indicative route corridor at landfall and onshore, while the Loch of Strathbeg Ramsar site (designated for nutrient-rich dune slack pool, sandwich tern, teal, goldeneye, pink-footed goose, greylag goose, whooper swan, and Svalbard barnacle goose) is within the onshore route corridor. These sites can be avoided by the cable route, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities (-1). The Loch of Strathbeg SSSI (designated for a breeding bird assemblage, non-breeding populations of goldeneye, greylag goose, pink-footed goose and whooper swan, eutrophic waterbody, sand dunes, salt marsh, fen meadow and open water transition fen) and the Loch of Strathbeg RSPB site cannot be avoided within the route corridor at landfall and onshore, and there is potential for short-term direct and indirect impacts on protected birds and habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Rora Moss SSSI (designated for raised bog habitats) and the Loch of Strathbeg IBA are within the route corridor but can be avoided by the cable route, avoiding the potential for direct impacts (-1). There are known locations of Annex I reef within the offshore route corridor and at landfall and known locations of Annex I saltmarsh at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity. There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for short-term negative impacts such as noise and disturbance to local residents in rural dwellings located in proximity to the route corridor during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and the Cairnbulg to St Combs Coast SSSI within the 5km indicative route corridor, but both can be avoided (-1). However, the Southern Trench MPA within the route corridor cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of good quality containing small patches of moderate to poor land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There is a lake within the 5km indicative route corridor onshore, but this can be avoided, avoiding the potential for direct impacts. There are rivers within the route corridor onshore that will either need to be avoided or crossed within the route corridor, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; these can be avoided, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the landfall route corridor, however these can be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are also located within the 5km indicative route corridor and cannot be avoided. Additionally, five onshore gas pipelines and numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (two oil/gas wells) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 12 known wreck locations within the offshore route corridor, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument within the route corridor at landfall and ten Scheduled monuments and one listed building within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. The Cairness and Crimonmogate Parks and Gardens are within the onshore route corridor. These sites can be avoided by cable routes within the corridor, avoiding the potential for direct impacts on these sites. There may be potential for short-term impacts on the setting of these heritage assets during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands, or urban areas within the 5km indicative route corridor. A part of the Formartine and Buchan Way National Trail is within the onshore route corridor, however, can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for short-term indirect visual impacts within this area during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The offshore route through the Southern Trench MPA could be in competition with HNDFUE routes for SW_NE3 and SW_NE8 and potentially the SSEN Peterhead to Spittal proposed HVDC link. Current landfall is located to the south east of Fraserburgh to separate it from the SW_NE3 connection but is shared with SW_NE8 and potentially the SSEN Peterhead – Spittal boot strap. The route may be in competition with INTOG routes Scaraben to Peterhead and Broadshore to Peterhead. Onshore routes are likely to be similar as all are connecting to the Peterhead area. The Peterhead area is also the proposed tie in for SW_NE7 and SE_E2b under HNDFUE plus being the origin for two SSEN HVDC bootstraps and thus could become very congested if all development is not co-ordinated.				

SW_NE7 Marram – Peterhead2/DCSS						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE7 Marram	Peterhead2/DCSS	113	1500	2 DC	1	Y – HNDFUE ScotWind
Overview of Route						



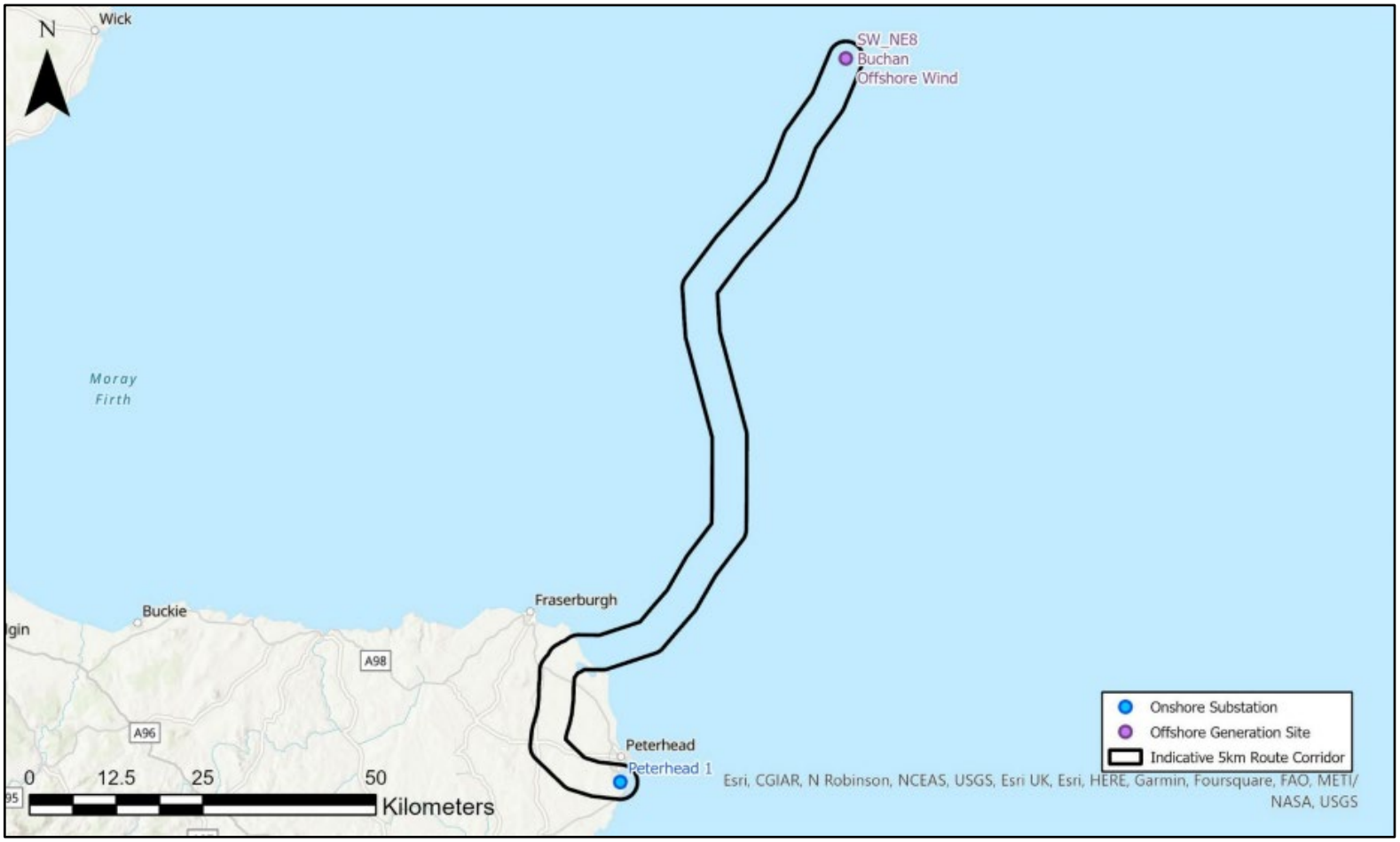
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). There may be a requirement for rock protection within the site owing to the crossing of a gas pipeline by the cable route. The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat, however the potential for long-term effects on habitats will need to be considered and avoided at the detailed design stage. There are known locations of Annex I reef within the offshore route corridor and at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity. There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban area of Peterhead is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and dredge and spoils sites within the 5km indicative route corridor, but both can be avoided (-1). However, the Southern Trench MPA within the route corridor cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are rivers within the route corridor onshore that will either need to be avoided or crossed, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones onshore and dredge and spoil dumping sites offshore within the route corridor; these can be avoided, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as seven gas pipelines are within the vicinity of the St Fergus Gas Terminal, which will need to be crossed. High-density shipping areas and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
offshore infrastructure (16 oil/gas wells and three offshore cables), a dredge spoil site, onshore infrastructure (two National Grid gas pipelines) and the Peterhead urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 14 known wreck locations within the offshore route corridor and one known wreck location within the route corridor at landfall, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument within the route corridor at landfall and five Scheduled monuments and one listed building within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, or National Trust lands within the 5km indicative route corridor. The urban area of Peterhead is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. A part of the Formartine and Buchan Way National Trail is within the onshore route corridor, however, can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for short-term indirect visual impacts within this area during the construction and decommissioning phases, depending on proximity to cable routes.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
There are multiple proposed offshore cables that overlap the SW_NE7 to Peterhead2/DCSS connection so this will need to be considered at the detailed design stage. The HND route SW_NE7 to Peterhead2/DCSS shares common routing on the approach to shore and onshore. The HNDFUE route SW_E2b to Peterhead shares a landfall and onshore route. This landfall and onshore route may also be common with at least one proposed HVDC east coast boot strap. The Peterhead2/DCSS area is also the proposed tie in for SW_NE6 and SE_NE8 OWFs plus the SSEN HVDC boot strap to Spittal and thus could become very congested if all development is not co-ordinated. Offshore the route crosses HND route SW_NE7 to SW_E1a and INTOG routes Aspen to Fetteresso, Cenos to Peterhead, Aspen to Newmachar and Aspen to Tealing. There is potential for environmental impacts in-combination with these works, particularly if undertaken concurrently, which should be considered at the project stage. This includes cumulative short-term impacts on habitats and mobile species in the vicinity of the works, short-term impacts on material assets such as additional offshore cable/pipeline crossings, short-term in-combination impacts on water quality, etc.				

SW_NE8 – Peterhead1						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_NE8 Buchan	Peterhead1	132	960	2 AC	2	Y - HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat. The Loch of Strathbeg SPA (designated for goldeneye, whooper swan, greylag goose, pink-footed goose, Svalbard barnacle goose, teal, and sandwich tern, non-breeding waterfowl assemblage) and Ramsar site (designated for nutrient-rich dune slack pool, sandwich tern, teal, goldeneye, pink-footed goose, greylag goose, whooper swan, and Svalbard barnacle goose) are within the 5km indicative route corridor at landfall and onshore. These sites can be avoided by the cable route, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities (-1). The Loch of Strathbeg SSSI (designated for a breeding bird assemblage, non-breeding populations of goldeneye, greylag goose, pink-footed goose and whooper swan, eutrophic waterbody, sand dunes, salt marsh, fen meadow and open water transition fen) and the Loch of Strathbeg RSPB site cannot be avoided within the route corridor at landfall and onshore, and there is potential for short-term direct and indirect impacts on protected birds and habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Loch of Strathbeg IBA is within the route corridor at landfall and onshore but can be avoided by the cable route, avoiding the potential for direct impacts. There are known locations of Annex I reef within the offshore route corridor and at landfall and known locations of Annex I saltmarsh at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity. There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Population and Human Health (PHH) The settlement of Longside / Mintlaw is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and the Cairnbulg to St Combs Coast SSSI within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct impacts (-1). However, the Southern Trench MPA and Loch of Strathbeg SSSI within the route corridor cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of good quality containing small patches of moderate to poor land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There is a lake within the 5km indicative route corridor onshore, but this can be avoided, avoiding the potential for direct impacts. There are rivers within the route corridor onshore that will either need to be avoided or crossed, therefore there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; these can be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from	-1	0/+1	0/+1	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the landfall route corridor, however these can be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct / Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one gas pipeline, which services the Captain Oil Field, is within the 5km indicative route corridor and will need to be crossed. High-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, five National Grid gas pipelines and numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (16 oil/gas wells) and two urban areas (Longside and Mintlaw) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 15 known wreck locations within the offshore route corridor, however, these can all be avoided	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument within the route corridor at landfall and six Scheduled monuments and one listed building within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities. The Cairness and Crimonmogate Parks and Gardens are within the onshore route corridor. These sites can be avoided by cable routes within the corridor, avoiding the potential for direct impacts on these sites. There may be potential for short-term impacts on the setting of these heritage assets during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, or National Trust lands within the 5km indicative route corridor. The settlement of Longside / Mintlaw is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. A part of the Formartine and Buchan Way National Trail is within the onshore route corridor, however, can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for short-term indirect visual impacts within this area during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The offshore route through the Southern Trench MPA could be in competition with HNDFUE routes for SW_NE3 and SW_NE6 and potentially the SSEN Peterhead to Spittal proposed HVDC link. Current landfall is located to the south east of Fraserburgh to separate it from the SW_NE3 connection but is shared with SW_NE8 and potentially the SSEN Peterhead – Spittal boot strap. The route may be in competition with INTOG routes Scaraben to Peterhead and Broadshore to Peterhead. Onshore routes are likely to be similar as all are connecting to the Peterhead area. The Peterhead area is also the proposed tie in for SW_NE7 and SE_E2b under HNDFUE plus being the origin for two SSEN HVDC bootstraps and thus could become very congested if all development is not co-ordinated.				

Arnish - Pentir						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Arnish	Pentir	733.4	2000	2 DC + Return	2	N - HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are numerous designated sites within the offshore route corridor due to its extensive length. The Inner Hebrides and the Minches SAC and the North Anglesey Marine SAC (both designated for harbour porpoise) are within the offshore route corridor and cannot be avoided. There is potential for impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of harbour porpoise and damage to supporting habitat (-2). The cable distance through the site is minimised, however, potential impacts and mitigation will need to be considered at the detailed design stage. The North Channel SAC (designated for harbour porpoise) is also within the offshore route corridor but can be avoided. The potential for short-term indirect impacts on the species will need to be considered at the detailed design stage (-1). The North-East Lewis MPA (designated, in part, for Risso's dolphin and sandeels) is within the route corridor offshore and at landfall at Arnish and cannot be avoided by the cable route. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated species and damage to habitat (-2). Risso's dolphins and sandeels have been identified as sensitive to pressures associated with cabling activities. Potential impacts and mitigation will need to be considered at the detailed design stage. There are several other designated sites within the route corridor offshore that are avoidable; these are the Mull of Galloway SAC (designated for vegetated sea cliffs), Irish Sea Front SPA (designated for Manx shearwater), South Rigg MCZ (designated for a variety of habitats and species), Clyde Sea Sill MPA (designated for fronts) and Sea of the Hebrides MPA (designated for basking shark and minke whale). The designated sites of Abermenai to Aberffraw Dunes SAC (designated for dunes) and Morfa Dinlle SSSI (designated for dune and shingle habitats) are within the landfall and onshore route corridor at Pentir but can be avoided. Numerous other designated sites within the onshore route corridor at Pentir can be avoided: Afon Gwyrfai A Llyn Cwellyn SSSI (designated for freshwater habitats and species), Glynllifon SAC (designated for lesser horseshoe bat), Afon Gwyrfai A Llyn Cwellyn SSSI (designated for freshwater habitats and species), and Pant Cae Haidd SSSI (designated for grassland and woodland habitats). There may be potential for short-term indirect impacts on protected features within these sites, which should be considered at the detailed design stage (-1). The Trefor IBA is located offshore and at landfall and onshore at Pentir, while the Morfa Dinlle RSPB Reserve is also at landfall and onshore at Pentir; these areas are avoidable within the route corridor (-1). There are known locations of Annex I reef within the offshore route corridor, landfall at Pentir and landfall at Arnish; these areas cannot be avoided offshore and at Arnish. There is potential for direct and indirect impacts	-2	-2	-2	Direct & Indirect

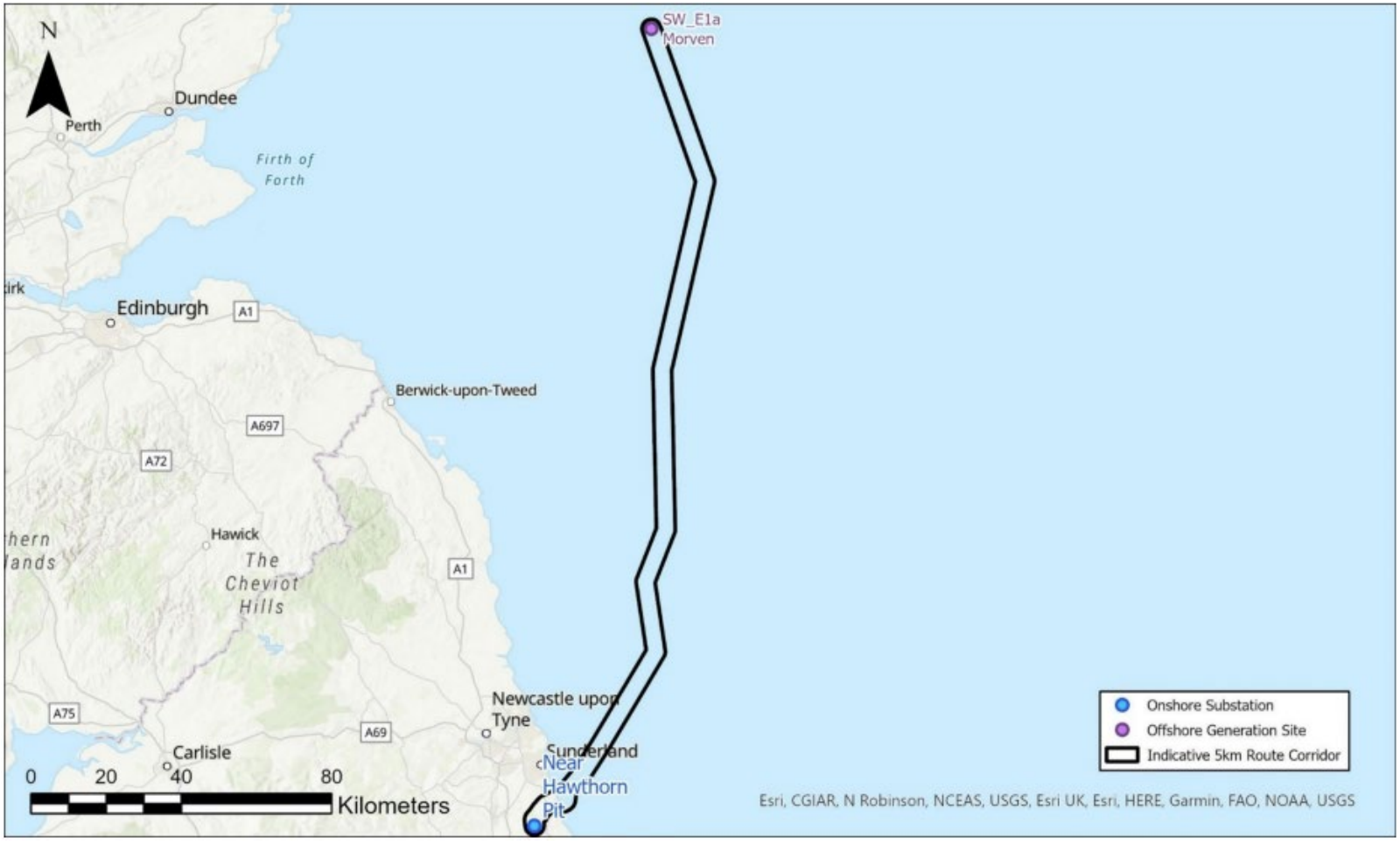
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
during construction and decommissioning and cable maintenance activities; direct impacts have the potential to be long-term or permanent (-2). There are known areas of NRW Key Sensitive Habitats within the offshore route corridor (including horse mussel beds and peat and clay exposures) and at landfall at Pentir (peat & clay exposures); these areas are avoidable, but there may be potential for indirect impacts that should be considered at the detailed design stage (-2). The PMFs of the Northern Sea fan and sponge communities are within the offshore route corridor but can be avoided (-1). There are areas of ancient woodland within the landfall and onshore route corridor at Pentir, however, these can be avoided by the cable route (-1). There are known locations of harbour seals offshore, which there is limited potential to avoid. There may be potential for short-term disturbance and displacement of these species during the construction and decommissioning phases and during cable maintenance activities (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) There are several urban areas within the onshore route corridor at Pentir, including Groeslon, Bontnewydd, Waunfawr, Caernarfon, Llanrug and Bethel. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is an unavoidable RYA boating area and an avoidable bathing water site (Morfa Dinlle) within the offshore route corridor. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the RYA boating area (direct) and the bathing water site (indirect) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is potential for negative effects on GSL within the route corridor. Offshore, there are dredge and spoil dumping sites, the Clyde Sea Sill MPA and the Shiant East Bank MPA which can be avoided, avoiding the potential for direct impacts (-1). The North-East Lewis MPA and Annex 1 reefs offshore and at the Arnish landfall cannot be avoided (-2). The Dinas Dinlle SSSI and Annex 1 reefs at Pentir landfall can be avoided, avoiding the potential for direct impacts (-1). The Afon Gwyrfai A Llyn Cwellyn SSSI onshore at Pentir cannot be avoided (-2) while the Dinas Dinlle SSSI can be avoided, avoiding the potential for direct impacts (-1). There is potential for	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily moderate & poor quality (-1). There is potential for short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative onshore route corridor at Pentir and the route corridor and landfall at Arnish, with potential to avoid these at Pentir but limited scope to avoid these at Arnish. There are rivers within the onshore route corridor and at landfall at Arnish, with potential to avoid these at landfall but limited scope to completely avoid these rivers in the onshore route corridor. There are rivers within the onshore route corridor and at landfall at Pentir, these will need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall at Arnish and Pentir, there is limited scope to completely avoid these at Arnish and these cannot be avoided at Pentir; therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore and at landfall at Arnish, there is potential to avoid these within the route corridor offshore but there is limited scope to avoid these at landfall (-2). There are areas benefiting from flood defences at landfall at Pentir, however there is potential to avoid these, avoiding the potential for direct impacts.	-2	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (733.4 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 25 offshore cables, three pipelines, one dredge and spoil dumping site, high-density shipping areas, a shipping lane, two military areas (Campbeltown and Juniper Rock) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, a railway line and a military area at Dinas Dinlle located within the onshore portions of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one diffuser and one oil/gas well), three dredge and spoil dumping sites, Stornoway Port, a designated anchorage area, a designated shipping area, one shipping lane within the Minch, two traffic separation zones, one proposed energy generation site (Argyll Tidal Ltd tidal site), onshore infrastructure (National Grid towers, overhead lines and cables near Pentir sub-station), three military areas near Dinas Dinlle and six urban areas (Groeslon, Bontnewydd, Waunfawr, Caernarfon, Llanrug and Bethel) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-3). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-3	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 71 known wreck locations within the offshore route corridor, 17 within the route corridor at landfall for Arnish and one within the route corridor at landfall for Pentir. There are two Scheduled monuments at landfall	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
and two within the onshore route corridor at Arnish, and one at landfall and 28 within the onshore route corridor at Pentir. There are four listed buildings within the landfall route corridor at Pentir and 237 within the onshore route corridor. The Lews Castle and Lady Lever Park is also within the onshore route corridor at Arnish. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no designated / sensitive landscape areas within the 5k indicative route corridor. There are several urban areas within the onshore route corridor at Pentir, including Groeslon, Bontnewydd, Waunfawr, Caernarfon, Llanrug and Bethel. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There is the potential for competition with HND route SW_W1 to Ballantrae offshore and Ballantrae to Pentir offshore, at landfall and onshore. The Pentir landfall is spatially constrained by NRW key sensitive habitats and there are several environmental designations that are unavoidable				

SW_E1a – Hawthorn Pit 2						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a Morven	Hawthorn Pit 2	230	1500	2 DC	1	N - HNDFUE ScotWind
Overview of Route						



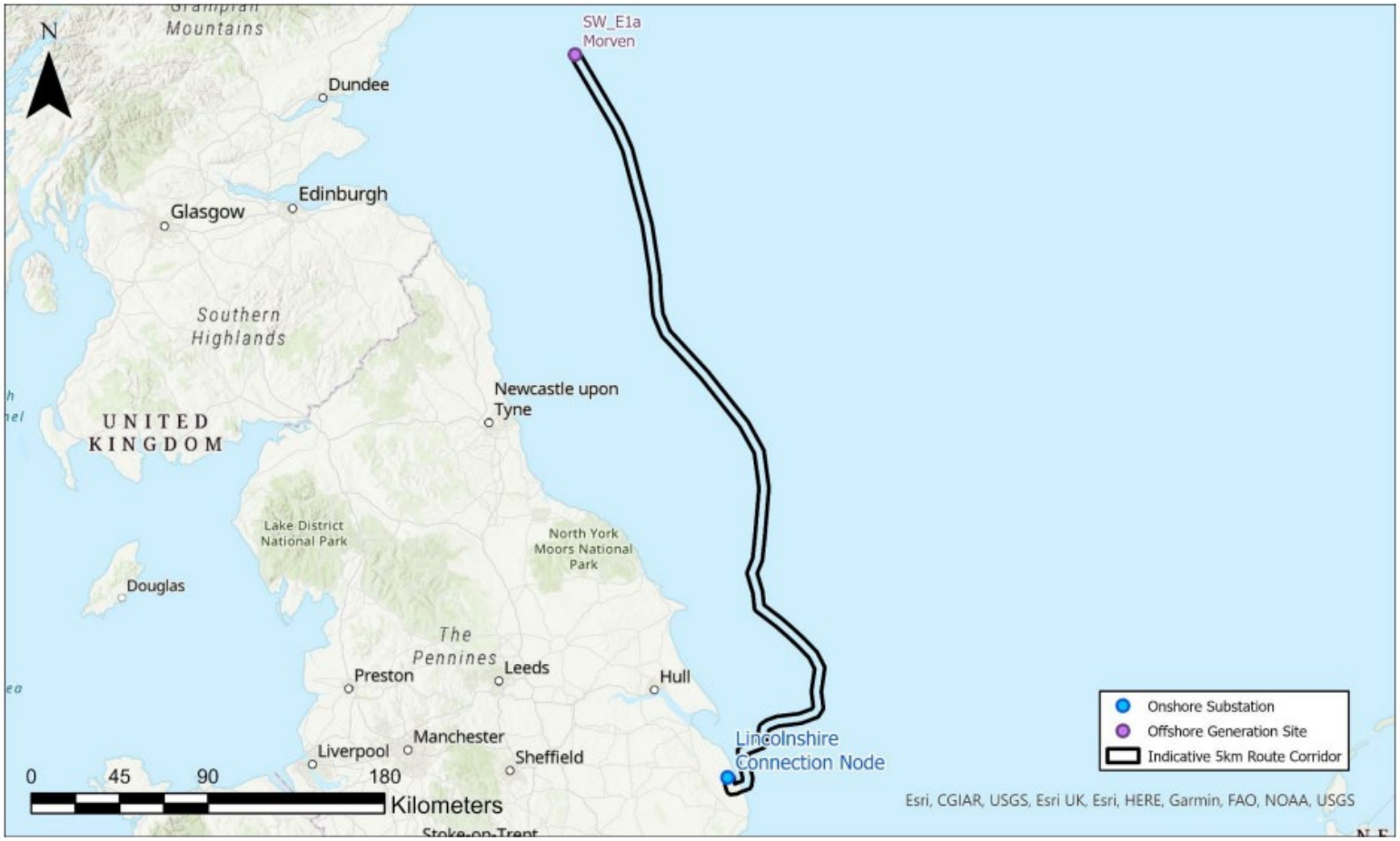
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Durham Coast SAC (designated for vegetated sea cliffs) and Durham Coast SSSI are within the route corridor at landfall. There is limited scope to avoid these sites and there is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, such as damage to habitats and indirect impacts through alteration of coastal processes (-2). The Northumbria Coast SPA (designated for breeding little tern and arctic tern and migratory turnstone and sandpiper) and Ramsar site (designated for turnstone, sandpipers and beach) are within the landfall route corridor but can be avoided. There may be potential for short-term indirect impacts on the designated features such as short-term disturbance and displacement (-2). The Dabble Bank SSSI (designated for grassland), Hawthorn Dene SSSI (designated for woodland and grassland), Pig Hill SSSI (designated for grassland), Tuthill Quarry SSSI (designated for grassland) and The Bottoms SSSI (designated for grassland) are within the onshore route corridor but are avoidable. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, which there is limited scope to avoid. There is potential for direct impacts and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities, which may be long-term to permanent in nature (-2). The Northumbria Coast IBA is within the route corridor at landfall and there are areas of ancient woodland within the landfall and onshore route corridor, however, these can be avoided by the cable route (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Seaham is within the route corridor at landfall and onshore, and the urban areas of Peterlee and Easington are within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is also an unavoidable RYA boating area in the offshore and landfall route corridor and an avoidable bathing water site (Seaham Beach) at landfall. There is potential for short-term, negative effects on the local population, such as noise and	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
disturbance and water quality impacts to the boating area (direct) and the bathing water site (indirect), during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and the Durham Coast SSSI within the 5km indicative route corridor along the coastline, which cannot be completely avoided (-2). The Hawthorn Quarry SSSI, Stony Cut, Cold Hesledon SSSI and Crime Rigg Quarry SSSI is present onshore but can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent agricultural land within the onshore route corridor. The agricultural lands are primarily good to moderate quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor, these cannot be completely avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; there is limited scope to completely avoid these, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (230 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two offshore cables, the Druridge Bay Military Area and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads and onshore infrastructure (National Grid towers and overhead lines) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (two diffusers), a dredge and spoil dumping ground, the Seaham Harbour and Marina, the Dawdon Blast Beach Pillbox, onshore infrastructure (National Grid cables) and three urban areas (Seaham, Peterlee and Easington) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Parks and Gardens or Conservation Areas within the 5km indicative route corridor. There are 36 known wreck locations within the offshore route corridor. There are ten	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
listed buildings at landfall and 34 within the onshore route corridor, and there is also a military WW2 pillbox at landfall and six Scheduled monuments within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, or National Trails within the 5km indicative route corridor. The Durham Heritage Coast and Durham Coast National Trust lands are within the route corridor at landfall and onshore, with limited potential for avoidance. There is potential for short-term impacts on the setting within these sensitive areas during the construction and decommissioning phases (-2). The urban area of Seaham is within the route corridor at landfall and onshore, and the urban areas of Peterlee and Easington are within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect
Cumulative and in combination issues				
The general area of the landfall is shared with the proposed east coast bootstrap from Branxton to Hawthorn Pit. The entire route is in common with the HND SW_E1a to Hawthorn Pit route. The route intersects the INTOG route Cenos to Hawthorn Pit offshore and shares a similar landfall. Proposed cables connecting at Branxton, Blyth and the offshore connection SW_E1a to SW_R4_2 intersect offshore but not within a designated site, although there may be sensitive habitats present that could be impacted by cable protection.				

SW_E1a – Lincolnshire Connection Node						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1a Morven	Lincolnshire Connection Node	455	2000	2 DC	1	Y - HNDFUE ScotWind
Overview of Route						



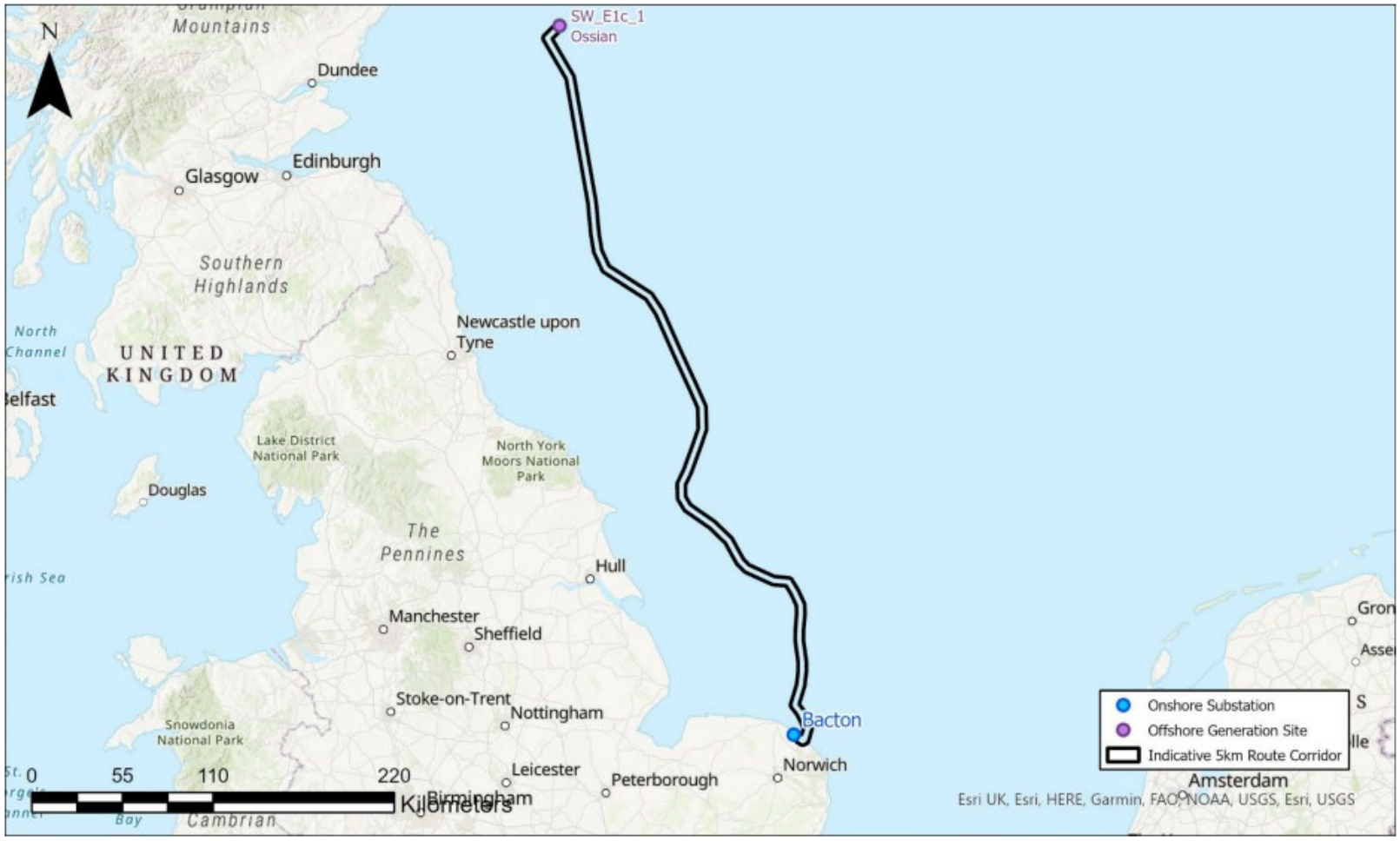
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Sea Bank Clay Pits SSSI is also within the route corridor at landfall and onshore, but can be avoided by the cable route, however, the potential for indirect impacts on site features will need to be considered at the project stage (-1). There are known locations of Annex I reef within the route corridor offshore, however, these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity (-1). There are known high densities of grey seals within the offshore route corridor and at landfall. This area cannot be avoided offshore and there is potential for direct and indirect impacts on the species in the short-term construction and decommissioning phases and during cable maintenance activities including damage, disturbance and displacement, which will need to be considered at the project stage (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban area of Sandilands is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for significant direct effects (-1). There are two avoidable bathing water sites (Moggs Eye, Sutton-On-Sea) and an unavoidable RYA boating area within the offshore and landfall route corridors. There is potential for short-term, negative effects on the local population, such as noise and disturbance as well as water quality impacts to the bathing waters (indirect) and the boating areas (direct) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and historic landfill sites within the 5km indicative route corridor which can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (455.3 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 15 offshore cables, 12 offshore pipelines, high-density shipping areas, two existing energy generation site cables (Hornsea 1 OFTO and Hornsea 2 OFTO), three military areas (Donna Nook, Staxton and Druridge Bay) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portions of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (39 oil/gas wells, nine oil/gas installations), an existing energy generation site cable from Triton Knolland and the Sandilands urban area located within the 5km indicative route corridor, all of which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 43 known wreck locations within the offshore route corridor. There are also four listed buildings at landfall, and 43 listed buildings and five Scheduled monuments within the onshore route corridor. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust, or National Trails within the 5km indicative route corridor. The urban area of Sandilands is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The landfall location is south of Sandilands and shares a similar landfall to HND routes into Lincolnshire Connection Node and Weston Marsh and these may require a coordinated approach with this route and potentially planned east coast bootstraps from Scotland. The offshore approach is spatially constrained due to a small gap of 10km for all connections to pass through with other existing cables. There are also cable crossings for HND routes required in waters less than 10m in depth. This route also crosses HND routes into Birkhill Wood and pass through the same gap between environmental designations (e.g. between the proposed North East of Farnes Deep HPMA and the Swallow Sand MCZ).				

SW_E1c_1 – Bacton						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1c_1 Ossian	Bacton	516	2000	2 DC	1	N - HNDFUE ScotWind
Overview of Route						



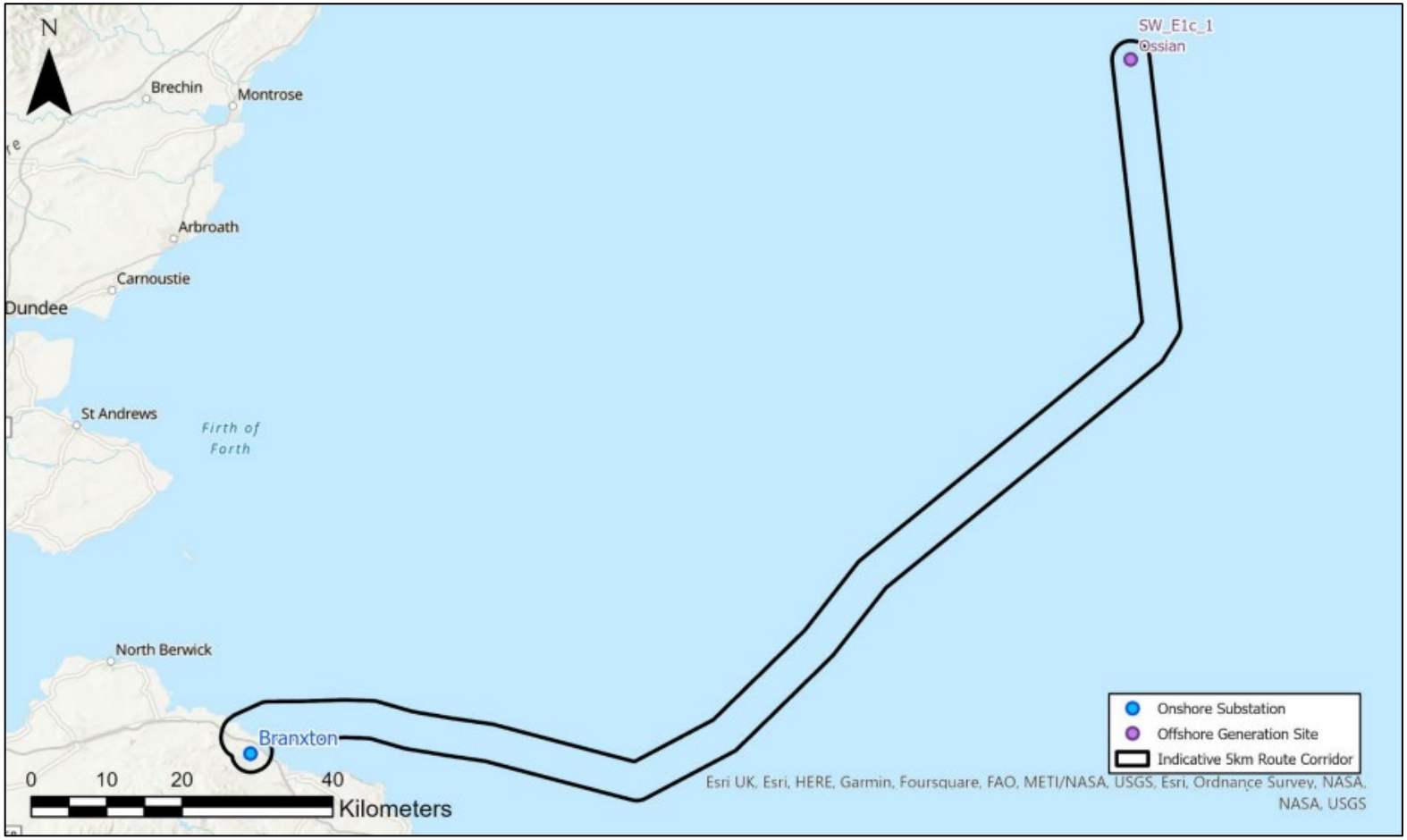
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern North Sea SAC (designated for harbour porpoise) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. There are nine cable crossings within the site that may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). There are 29 cable crossings within the site that may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Haisborough, Hammond and Winterton SAC (designated for sandbanks) and Cromer Shoal Chalk Beds MCZ (designated for infralittoral rock communities) are within the offshore route corridor but can be avoided, avoiding the potential for direct impacts. There is a requirement for a number of pipeline crossings in proximity to these sites, and there is potential for indirect impacts on the designated features within these sites in the short-term construction and decommissioning phases and during any cable maintenance activities (-2). The Paston Great Barn SSSI (designated for bats) is also within the onshore route corridor but can be avoided; the potential for indirect disturbance should be considered at the detailed design stage (-1). There are known locations of Annex I sandbank within the route corridor offshore that cannot be avoided but could be minimised at the detailed design stage and there is potential for direct and indirect impacts on this habitat (-2). There are areas of ancient woodland within the onshore route corridor, however, these are avoidable (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban areas of Walcott and Paston are within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is potential for negative effects on GSL within the route corridor. The Cromer Shoal Chalk Beds MCZ is within the 5km indicative route corridor offshore and cannot be completely avoided, but with a 4.5km gap there is a possibility for micro routing, avoiding the potential for direct impacts (-2). The Annex 1 sandbanks present offshore are unavoidable (-2). The Happisburgh Cliffs SSSI at landfall and the onshore Mundesley Cliffs SSSI can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are areas identified as excellent quality agricultural land within the onshore route corridor (-2). The remaining agricultural lands are primarily very good and good quality (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore, there	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (51.64 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 13 offshore cables, 26 offshore pipelines, high-density shipping areas, two existing energy generation site cables (Hornsea 1 OFTO and Hornsea 2 OFTO), two military areas (Staxton and Druridge Bay) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portions of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (91 oil/gas wells and seven oil/gas installations), two wind site agreements (Dudgeon Extension and Round 4 Preferred Project), onshore infrastructure (five gas pipelines) and two urban areas (Walcott and Paston) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 56 known wreck locations within the offshore route corridor and four within the route corridor at landfall. There are two Scheduled monuments and 67 listed buildings within the onshore route corridor. The Happisburgh Manor Park and Garden is also within the landfall and onshore route corridor. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). In general, there is also potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The Norfolk Coast AONB is within the onshore route corridor but can be avoided. There may be potential for short-term, indirect impacts on the setting within this area (-1). The urban areas of Walcott and Paston are within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route corridor may be competing for space with the route SW_E1a to Lincolnshire Connection Node and route to Norwich. The route crosses HND Routes into Birkhill Wood. Offshore the link crosses HND links to Creyke Beck, PA_1 to Hawthorn Pit, SW_E1a to R4_1, SW_E1a to R4_2 and INTOG routes Cedar to Branxton, Cedar to Fetteresso, Cenos to Lackenby, Cenos to Fetteresso and Cenos to Hawthorn Pit. Pipeline crossings are required adjacent to the North Norfolk Sandbanks and Saturn Reef SAC, Cromer Shoal Chalk Beds MCZ and Haisborough, Hammond and Winterton SAC, which may create indirect impacts upon sensitive features in these designations due to the requirements for cable protection.				

SW_E1c_1 - Branxton						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1c_1 Ossian	Branxton	186	1800	2 DC	1	N - HNDFUE ScotWind
Overview of Route						



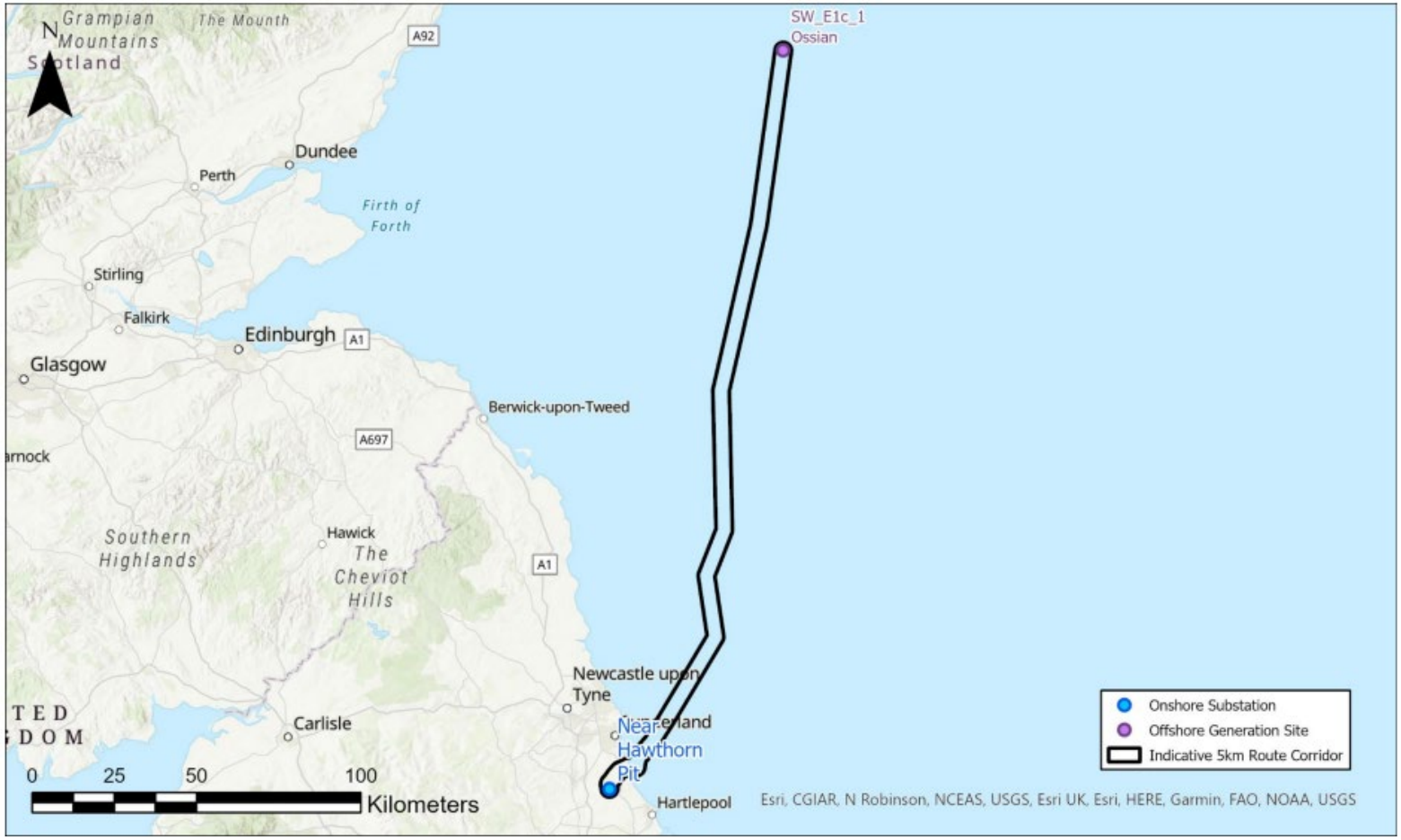
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species and damage to supporting habitat (-2). Potential impacts and mitigation will need to be considered at the detailed design stage. The Barns Ness Coast SSSI (designated for saltmarsh, sand dune and shingle habitats) is within the route corridor at landfall and there is limited potential to avoid this site. There is potential for direct and indirect impacts on the protected features within this site in the short-term construction and decommissioning phases and during cable maintenance activities (-2). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that cannot be avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. There are known locations of ancient woodland within the onshore route corridor, however these can be avoided by the cable route within the 5km indicative corridor (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) There are two avoidable bathing water sites (Thorntonloch and Whitesands) within the landfall route corridor, avoiding the potential for direct impacts (-1). There is potential for short-term indirect water quality impacts due to mobilisation of sediments during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs offshore and the Barns Ness Coast SSSI at landfall which cannot be completely avoided within the 5km	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
indicative route corridor (-2). There are also Annex 1 reefs at landfall, but these can be avoided (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily very good to good quality (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as the existing energy generation cable for the Neart Na Gaoithe offshore wind farm and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, railway lines and onshore infrastructure (three Scottish Power transmission cables) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is onshore infrastructure (Scottish Power overhead line) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-3). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-3	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 19 known wreck locations within the offshore route corridor. There are three Scheduled monuments within the route corridor at landfall and 25 within the onshore route corridor. The Dunglass Park and Garden is also within the landfall and onshore route corridor. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no known sensitive landscape areas within the 5km indicative route corridor. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The landfall area is shared with the Neart Na Gaoithe (NnG) offshore wind farm cable connection. SSE Renewables-Berwick Bank wind farm also proposes a second coincident cable landfall, while the proposed National Grid Eastern Link 1 cable landfall is also co-located at this landfall. The route corridor crosses HND routes PA_2 to Blyth, SW_E1a to Hawthorn Pit and SW_E1a to Lincolnshire Connection Node. The route may also be competing for space with the HND route PA_2 to Branxton and INTOG route Cedar to Braxton at landfall and onshore. The route crosses the HND routes SW_E1a to Hawthorn Pit.				

SW_E1c_1 – Hawthorn Pit						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1c_1 Ossian	Hawthorn Pit	240	2000	2 DC	1	N – HNDFUE ScotWind
Overview of Route						



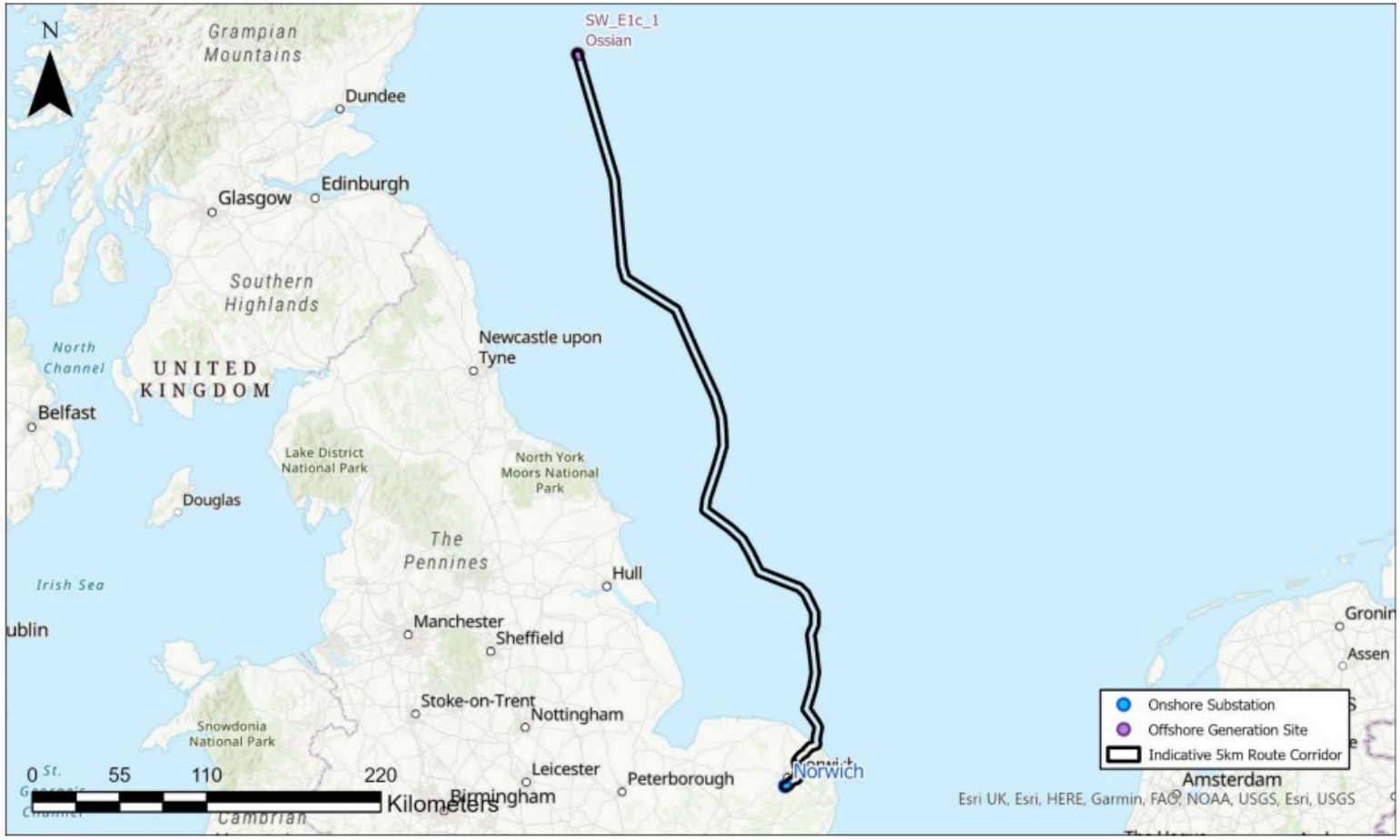
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Durham Coast SAC (designated for vegetated sea cliffs) and Durham Coast SSSI are within the route corridor at landfall. There is limited scope to avoid these sites at landfall and there is potential for direct and indirect within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, such as damage to habitats (-2). The Northumbria Coast SPA (designated for breeding little tern and arctic tern and migratory turnstone and sandpiper) and Ramsar site (designated for turnstone, sandpipers and beach) are within the landfall route corridor but can be avoided. The Dabble Bank SSSI (designated for grassland), Hawthorn Dene SSSI (designated for woodland and grassland), Tuthill Quarry SSSI (designated for grassland), Hesledon Moor West SSSI (designated for grassland), The Bottoms SSSI (designated for grassland) and Pig Hill SSSI (designated for grassland) are also within the onshore route corridor but are avoidable. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, which there is limited scope to avoid. There is potential for direct impacts and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities, which may be long-term to permanent in nature (-2). The Northumbria Coast IBA is within the route corridor at landfall and there are areas of ancient woodland within the landfall and onshore route corridor, however, these can be avoided by the cable route (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Seaham is within the route corridor at landfall and onshore, and the urban areas of Peterlee and Easington are within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is an unavoidable RYA boating area and an avoidable bathing water site (Seaham Beach) within the offshore and landfall route corridors. There is potential for short-term, negative effects on the local population, such as noise and disturbance and short-term water quality impacts to the RYA site (direct) and bathing water site (indirect) during the construction and	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites, the Hawthorn Quarry SSSI, Stony Cut, Cold Hesledon SSSI, Tuthill Quarry SSSI and Crime Rigg Quarry SSSI, all of which can be avoided, avoiding the potential for direct impacts (-1). The Annex 1 reefs and Durham Coast SSSI offshore and at landfall, cannot be completely avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor, these cannot be completely avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; there is limited scope to completely avoid these, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore, however, there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (240.7 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two offshore cables, the Druridge Bay Military Area and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, a railway line and onshore infrastructure (National Grid towers and overhead lines) located within the onshore portions of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (three diffusers), a dredge and spoil dumping site, Seaham Harbour and Marina, onshore infrastructure (National Grid cables), the Dawdon Blast Beach Pillbox and three urban areas (Seaham, Peterlee and Easington) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Parks and Gardens or Conservation Areas within the 5km indicative route corridor. There are 36 known wreck locations within the offshore route corridor. There are ten	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
listed buildings at landfall and 34 within the onshore route corridor, and there is also a military WW2 pillbox at landfall and six Scheduled monuments within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, or National Trails within the 5km indicative route corridor. The Durham Heritage Coast and Durham Coast National Trust lands are within the route corridor at landfall and onshore, with limited potential for avoidance. There is potential for short-term impacts on the setting within these sensitive areas during the construction and decommissioning phases (-2). The urban area of Seaham is within the route corridor at landfall and onshore, and the urban areas of Peterlee and Easington are within the onshore route corridor. However, these areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect
Cumulative and in combination issues				
The general area of the landfall is shared with the proposed east coast bootstrap from Branxton to Hawthorn Pit. The route is in common with the HND SW_E1a to Hawthorn Pit route. The route crosses HND route SW_E1a to Lincolnshire Connection Node, SW_E1a to Blyth, Sw_E1a to R4_1 and SW_E1a to R4_2. The route intersects INTOG route Cedar to Branxton.				

SW_E1c_1 – Norwich Main						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1c_1 Ossian	Norwich Main	542	2000	2 DC	1	N – HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern North Sea SAC (designated for harbour porpoise) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. There are nine cable crossings within the site that may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). There are 29 cable crossings within the site that may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Haisborough, Hammond and Winterton SAC (designated for sandbanks), North Norfolk sandbanks and Saturn Reef SAC (designated for sandbanks and biogenic reefs), and Cromer Shoal Chalk Beds MCZ (designated for infralittoral rock communities) are within the offshore route corridor but can be avoided, avoiding the potential for direct impacts. There is a requirement for several pipeline crossings in proximity to these sites, and there is potential for indirect impacts on the designated features within these sites in the short-term construction and decommissioning phases and during any cable maintenance activities (-2). There are also numerous designated sites that are within the onshore route corridor but are avoidable. These are The Broads SAC (designated for freshwater habitats and species, bogs and fen), Broadland SPA (designated for great bittern, Eurasian marsh harrier, Bewick's swan, whooper swan, hen harrier and ruff), Broadland Ramsar site (designated for wetland habitat and bird species), East Ruston Common SSSI (designated for fen health and woodland), Calthorpe Broad SSSI (designated for freshwater flora and fauna), Broad Fen, Dilham SSSI (designated for freshwater and fen habitats), Yare Broads and Marshes SSSI (designated for wetland habitats), Ant Broads and Marshes SSSI (designated for wetland habitats), Bure Broads and Marshes SSSI (designated for wetland habitats), Smallburgh Fen SSSI (designated for fen), and Shotesham Common SSSI (designated for	-2	0	0	Direct & Indirect

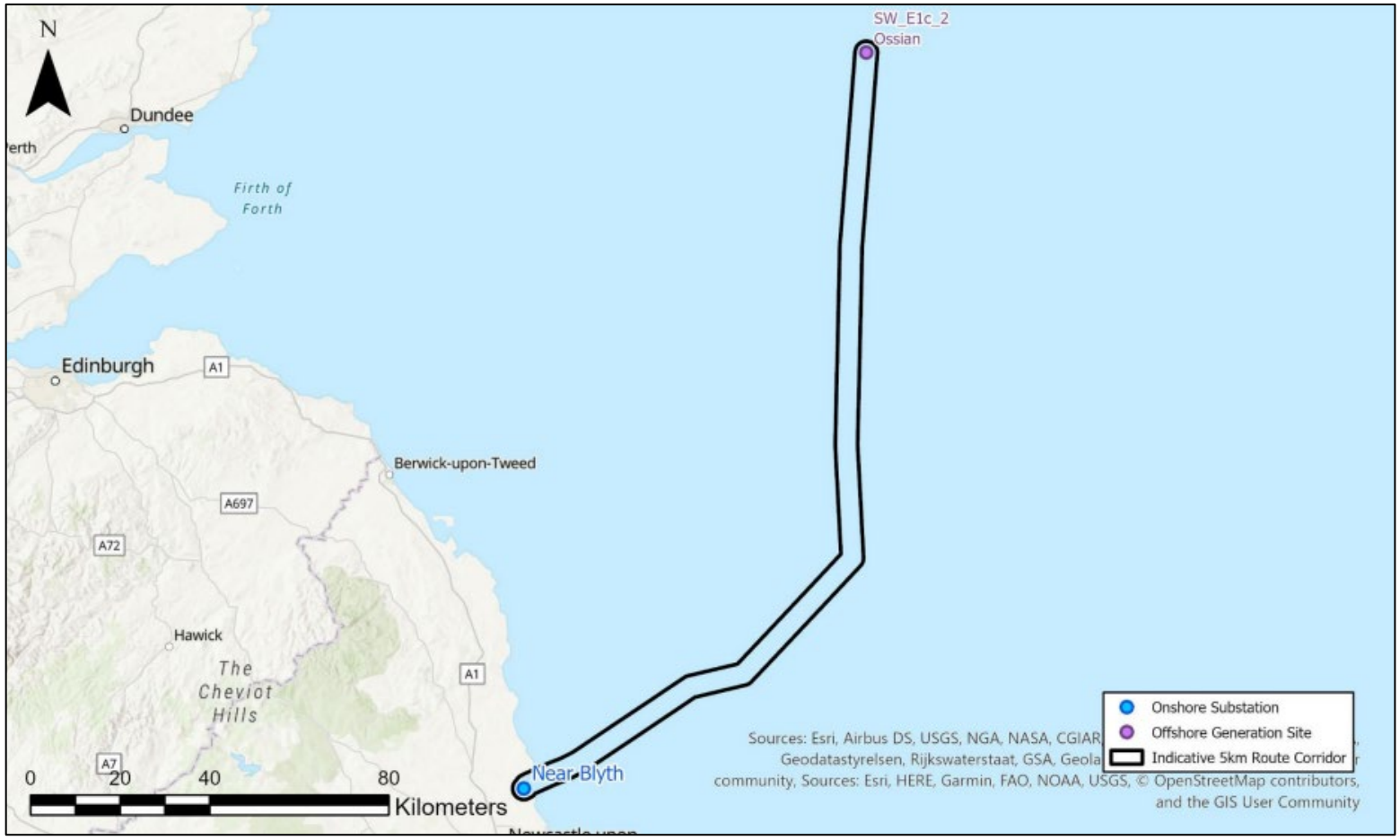
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
meadows). There may be potential for indirect impacts on site features, which will need to be considered at the project stage (-1). There are known locations of Annex I sandbank within the route corridor offshore that cannot be avoided but could be minimised at the detailed design stage and there is potential for direct and indirect impacts on this habitat (-2). There are areas of ancient woodland within the onshore route corridor, however, these are avoidable. The Mid Yare Valley and Sutton Fen RSPB Reserves and the Broadland IBA are also within the onshore route corridor but are avoidable. The potential for indirect impacts on birds within these sites should be considered at the detailed design stage (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban area of Norwich is within the route corridor onshore but can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is also the Sea Palling bathing water area within the landfall route corridor which is avoidable. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the bathing area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 sandbanks throughout the 5km indicative route corridor that cannot be avoided (-2). The Cromer Shoal Chalk Beds MCZ has the potential to be avoided by careful assessment, avoiding the potential for direct impacts (-2). There is a historic landfill site, the Bramerton Pits SSSI and Caistor St. Edmund Chalk Pit SSSI onshore but can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are areas identified as excellent quality agricultural land within the onshore route corridor (-2). The other agricultural lands are primarily of very good and good quality (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (542.5 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 15 offshore cables, 22 offshore pipelines, high-density shipping areas, two active wind cable agreements (Hornsea 1 and Hornsea 2) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, a	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
railway line and onshore infrastructure (National Grid gas pipes) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (84 oil/gas wells and eight oil/gas installations), two marinas (Barnes Brinkcraft – Powles Marina and Moonfleet Marina), onshore infrastructure (National Grid cables, towers and overhead lines) and the Norwich urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 52 known wreck locations within the offshore route corridor and three within the route corridor at landfall. There are 12 Scheduled monuments and 328 listed buildings within the onshore route corridor. There are also two Registered Parks and Gardens within the onshore route corridor, Beeston Hall and Crown Point. However, these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The Broads National Park is within the onshore route corridor and cannot be avoided. There is potential for short-term impacts on the setting within this sensitive area during the construction and decommissioning phases (-2). The North Norfolk AONB is within the route corridor at landfall but can be avoided. There is potential for short-term, indirect impacts on the setting within this area (-1). The urban area of Norwich is within the route corridor onshore but can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
The route corridor may be competing for space with the route SW_E1a to Lincolnshire Connection Node. The route crosses HND Routes into Birkhill Wood. Offshore the link crosses HND links to Creyke Beck, PA_1 to Hawthorn Pit, SW_E1a to R4_1, SW_E1a to R4_2 and INTOG routes Cedar to Branxton, Cedar to Fetteresso, Cenos to Lackenby, Cenos to Fetteresso and Cenos to Hawthorn Pit. Pipeline crossings are required adjacent to the North Norfolk Sandbanks and Saturn Reef SAC, Cromer Shoal Chalk Beds MCZ and Haisborough, Hammond and Winterton SAC, which may create indirect impacts upon sensitive features in these designations due to the requirements for cable protection.				

SW_E1c_2 - Blyth						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1c_2 Ossian	Blyth 2	205	1800	2 DC	1	N – HNDFUE ScotWind
Overview of Route						



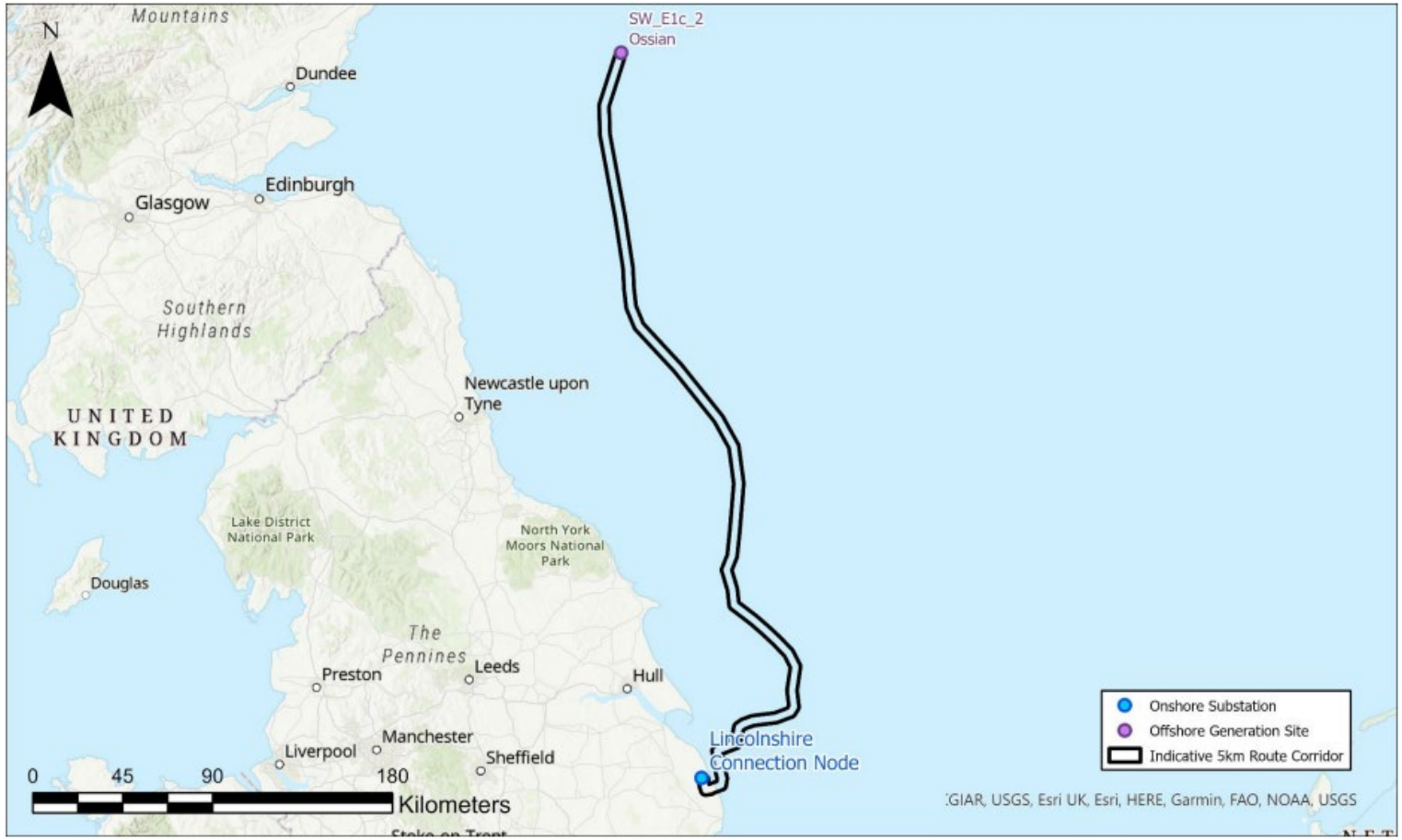
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Berwick to St Mary's MCZ (designated for common eider), Coquet to St Marys MCZ (designated for rock and sediment communities on the shoreline and on the seabed), and Northumberland Marine SPA (designated for breeding tern species and migratory species such as puffin and guillemot), are within the offshore and landfall route corridor, and the Northumberland Marine SPA is also within the onshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of bird species or damage to habitats (-3). The Northumberland Shore SSSI (designated for purple sandpiper, turnstone, sanderling, golden plover, ringed plover, and redshank) is within the route corridor at landfall and onshore and also cannot be avoided at landfall, and there is potential for short-term direct and indirect impacts on protected features (-2). The Northumbria Coast SPA (designated for breeding little tern and arctic tern and migratory turnstone and sandpiper) is within the offshore and landfall route corridor, but can be avoided by the cable route, avoiding the potential for direct impacts; the potential for indirect impacts should be considered at the detailed design stage (-2). The Northumbria Coast IBA is avoidable at landfall (-1) There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall, which there is limited scope to avoid. There is potential for direct impacts and indirect impacts on this habitat during construction and decommissioning and cable maintenance activities, which may be long-term to permanent in nature in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Blyth is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for significant direct effects (-1). There is also an RYA boating area and the Newbiggin South bathing water site within the landfall route corridor, which can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance, and water quality impacts to the boating and bathing areas during the construction and decommissioning phases and cable maintenance activities (-1). There is potential for positive effects from the facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Cresswell and Newbiggin Shores SSSI present within the route corridor can be avoided (-1). The dredge and spoil dumping sites, Annex 1 reefs and Northumberland Shore SSSI within the 5km indicative route corridor, cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor which cannot be completely avoided, with minor rivers needing to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from the facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and any cable maintenance	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (205.1 km route length) during the construction and decommissioning phases and any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as three Blyth wind farm demonstration sites, six offshore cables, a dredge and spoil dumping site, the Druridge Bay Military Area and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, and a railway line located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (two diffusers and one pipeline), the Port of Blyth, the Blyth Demo Phase 1 wind farm cable, onshore infrastructure (National Grid towers, cables and overhead lines) and the Blyth urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-3). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-3	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are 17 known wreck locations within the offshore route corridor. There is one listed building within the route corridor at landfall and 15 within the onshore route corridor. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes (-1). In general, there is also potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust, or National Trails within the 5km indicative route corridor. The urban area of Blyth is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for visual effects to many receptors within this more densely populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The landfall at Blyth is shared with Blyth Demonstration wind farm phases 1-3. The NSL interconnector also landfalls in a similar area to the proposed SW_E1c_2 connection to Blyth. There are multiple proposed offshore cables that overlap the SW_E1c_2 to Blyth connection so this will need to be considered at the detailed design stage. The link crosses the HND routes SW_E1a to Hawthorn Pit and SW_E1a to Lincolnshire Connection Node, HNDFUE route SW_E1a to Hawthorn Pit and offshore shares a similar route to routes to Southern England. The route shares a similar landfall to HND route PA_2 to Blyth.				

SW_E1c_2 – Lincolnshire Connection Node						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1c_2 Ossian	Lincolnshire Connection Node	444	2000	2 DC	1	N – HNDFUE ScotWind
Overview of Route						



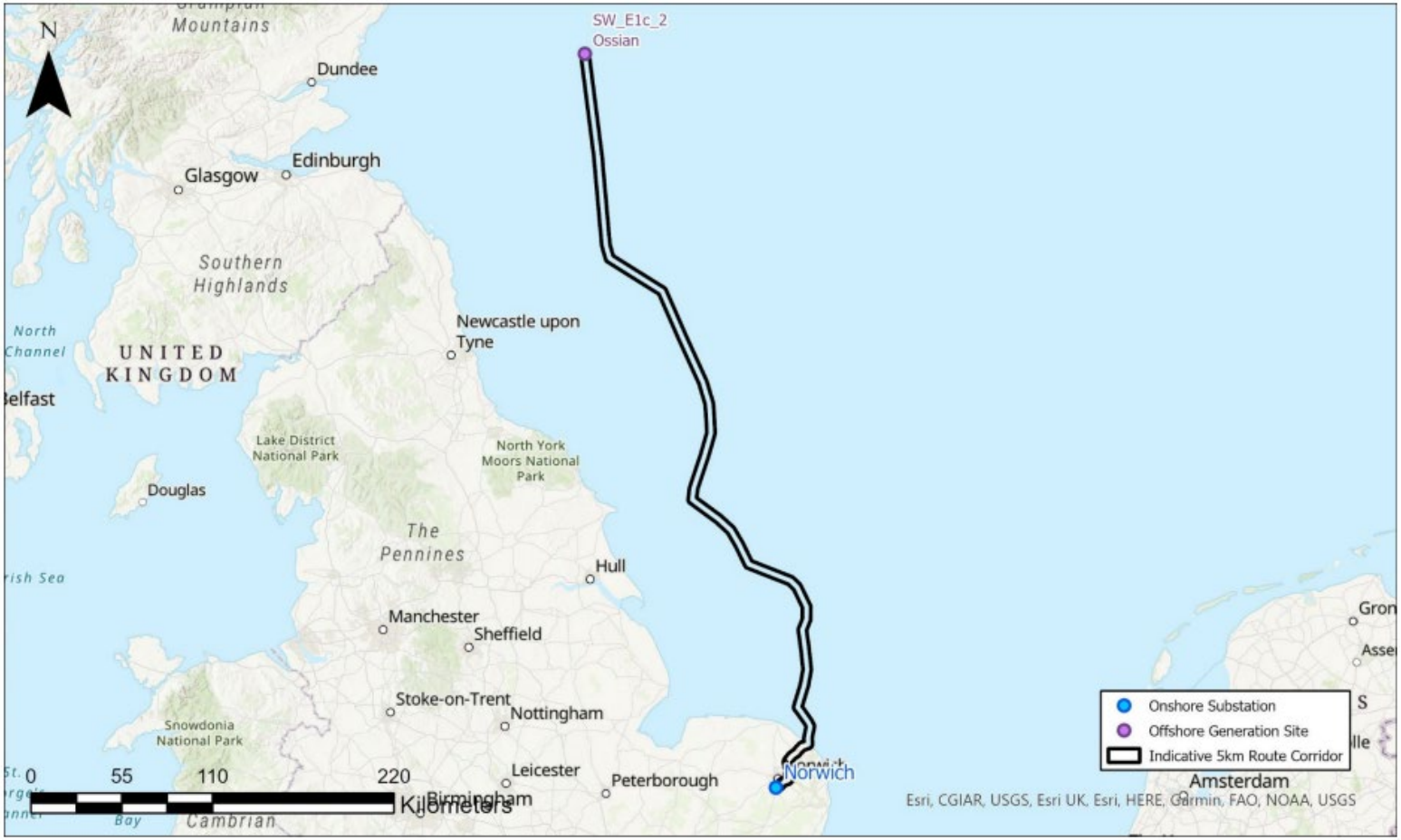
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Sea Bank Clay Pits SSSI is also within the route corridor at landfall and onshore, but can be avoided by the cable route, however, the potential for indirect impacts on site features will need to be considered at the project stage (-1). There are known locations of Annex I reef within the offshore route corridor, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity (-1). There is known high density of grey seals within the offshore route corridor and at landfall. This area cannot be avoided offshore and there is potential for direct and indirect impacts on the species in the short-term construction and decommissioning phases and during cable maintenance activities including damage, disturbance and displacement, which will need to be considered at the project stage (-1).	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban area of Sandilands is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for significant direct effects (-1). There are also two avoidable bathing areas (Moggs Eye, Sutton-On-Sea) and an unavoidable RYA boating area within the offshore and landfall route corridors, however, all of which can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the bathing areas (indirect) and RYA areas (direct) during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs and a historic landfill within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily very good to good quality (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (444.1 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 15 offshore cables, 12 offshore pipelines, high-density shipping areas, three military areas (Donna Nook, Staxton and Druridge Bay), two active wind cable agreements (Hornsea 1 and Hornsea 2) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (39 oil/gas wells and nine oil/gas installations), the existing Triton Knoll energy generation site cable and the Sandilands urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 43 known wreck locations within the offshore route corridor. There are also four listed buildings at landfall, 43 listed buildings and six Scheduled monuments within the onshore route corridor. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust, or National Trails within the 5km indicative route corridor. The urban area of Sandilands is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The landfall location is south of Sandilands and shares a similar landfall to HND routes into Lincolnshire Connection Node and these may require a coordinated approach with this route and potentially planned east coast bootstraps from Scotland. The offshore approach is spatially constrained due to a gap of 10km for all connections to Lincolnshire Connection Node and Weston Marsh to pass through with other existing cables. There are also cable crossings for HND routes required in waters less than 10m in depth. Offshore the link crosses HND links to Birkhill Wood / Creyke Beck, PA_1 to Hawthorn Pit, SW_E1a to R4_1, SW_E1a to R4_2 and INTOG routes Cedar to Branxton, Cenos to Lackenby and Cenos to Hawthorn Pit.				

SW_E1c_2 – Norwich Main						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E1c_2 Ossian	Norwich Main	521	2000	2 DC	1	N - HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern North Sea SAC (designated for harbour porpoise) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. There are nine cable crossings within the site that may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). There are 29 cable crossings within the site that may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. This SPA already has a large amount of disturbance impact on the red throated diver from vessel traffic and offshore wind farm developments. The Haisborough, Hammond and Winterton SAC (designated for sandbanks), North Norfolk Sandbanks and Saturn Reef SAC (designated for sandbanks and biogenic reefs), and Cromer Shoal Chalk Beds MCZ (designated for infralittoral rock communities) are within the offshore route corridor but can be avoided, avoiding the potential for direct impacts. There is a requirement for a number of pipeline crossings in proximity to these sites, and there is potential for indirect impacts on the designated features within these sites in the short-term construction and decommissioning phases and during any cable maintenance activities (-2). There are also numerous designated sites that are within the onshore route corridor but are avoidable. These are The Broads SAC (designated for freshwater habitats and species, bogs and fen), Broadland SPA (designated for great bittern, Eurasian marsh harrier, Bewick's swan, whooper swan, hen harrier and ruff), Broadland Ramsar site (designated for wetland habitat and bird species), East Ruston Common SSSI (designated for fen health and woodland), Calthorpe Broad SSSI (designated for freshwater flora and fauna), Broad Fen, Dilham SSSI (designated for freshwater and fen habitats), Yare Broads and Marshes SSSI (designated for wetland habitats), Ant Broads and Marshes SSSI (designated for wetland habitats), Bure Broads and Marshes SSSI (designated for wetland habitats), Smallburgh Fen SSSI (designated for fen), and Shotesham Common SSSI (designated for	-2	0	0	Direct & Indirect

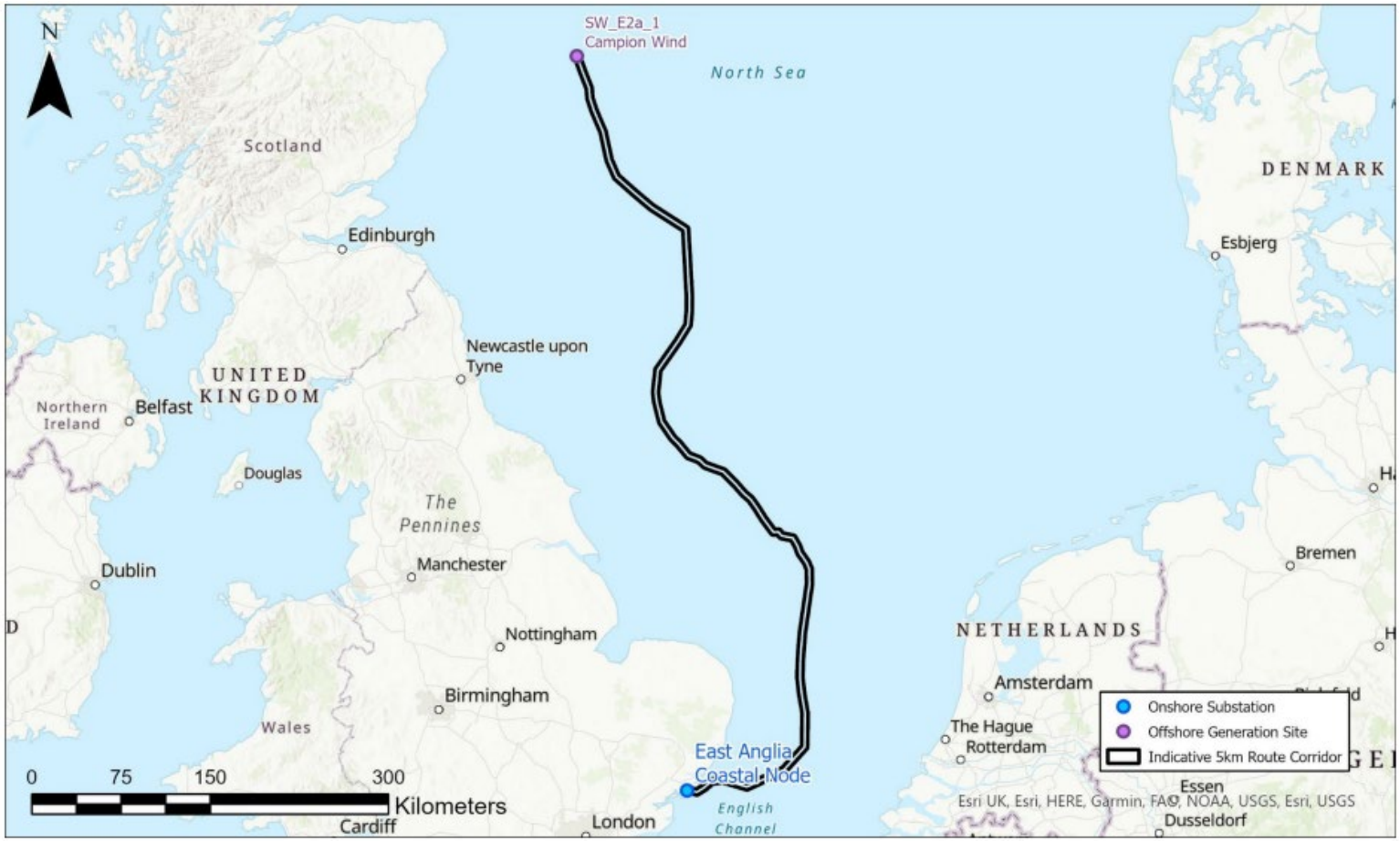
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
meadows). There may be potential for indirect impacts on site features, which will need to be considered at the project stage (-1). There are known locations of Annex I sandbank within the route corridor offshore that cannot be avoided but could be minimised at the detailed design stage and there is potential for direct and indirect impacts on this habitat (-2). There are areas of ancient woodland within the onshore route corridor however these are avoidable. The Mid Yare Valley and Sutton Fen RSPB Reserves and the Broadland IBA are also within the onshore route corridor but are avoidable. The potential for indirect impacts on birds within these sites should be considered at the detailed design stage (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban fringes of Norwich and surrounding settlements are within the route corridor onshore but can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). The Sea Palling bathing water site is located within the route corridor at landfall but can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the bathing water area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is potential for negative effects on GSL within the route corridor. The Cromer Shoal Chalk Beds MCZ is within the 5km indicative route corridor offshore and cannot be completely avoided, but with a 4.5km gap there is a possibility for micro routing, avoiding the potential for direct impacts (-2). The Annex 1 sandbanks present offshore are unavoidable (-2). The historic landfill sites, Bramerton Pits SSSI and the Caistor St. Edmund Chalk Pit SSSI can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are identified areas of excellent quality agricultural land within the onshore route corridor (-2). The remaining agricultural lands are primarily very good and good quality (-2). There is potential for a short-term	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (521.9 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA)	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for short-term negative effects on MA as 15 offshore cables, 22 offshore pipelines, high-density shipping areas, two active wind cable agreements (Hornsea 1 and Hornsea 2), two military areas (Staxton and Druridge Bay) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, a railway line and onshore infrastructure (National Grid gas pipes) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (84 oil/gas wells and eight oil/gas installations), two marinas (Barnes Brinkcraft – Powles Marina and Moonfleet Marina), onshore infrastructure (National Grid cables, towers and overhead lines) and the Norwich urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 52 known wreck locations within the offshore route corridor and three within the route corridor at landfall. There are 12 Scheduled monuments and 328 listed buildings within the onshore route corridor. There are also two Registered Parks and Gardens within the onshore route corridor, Beeston Hall and Crown Point. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The Broads National Park is within the onshore route corridor and cannot be avoided. There is potential for short-term impacts on the setting within this sensitive area during the construction and decommissioning phases (-2). The Norfolk Coast AONB is within the route corridor at landfall but can be avoided. There may be potential for short-term, indirect impacts on the setting within this area (-1). The urban fringes of Norwich and	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
surrounding settlements are within the route corridor onshore but can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
The route corridor may be competing for space with the route SW_E1a to Lincolnshire Connection Node and route to Bacton. The route crosses HND Routes into Birkhill Wood. Offshore the link crosses HND links to Creyke Beck, PA_1 to Hawthorn Pit, SW_E1a to R4_1, SW_E1a to R4_2 and INTOG routes Cedar to Branxton, Cedar to Fetteresso, Cenos to Lackenby, Cenos to Fetteresso and Cenos to Hawthorn Pit. Pipeline crossings are required adjacent to the North Norfolk Sandbanks and Saturn Reef SAC, Cromer Shoal Chalk Beds MCZ and Haisborough, Hammond and Winterton SAC, which may create indirect impacts upon sensitive features in these designations due to the requirements for cable protection.				

SW_E2a_1 – East Anglia Coastal Node						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E2a_1 Campion	East Anglia Coastal Node	801	2000	2 DC	1	N – HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are numerous designated sites within the route corridor, owing to its extensive length. The Southern North Sea SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species such as sandeels (-2). Conservation objectives for the site include condition of supporting habitats and processes and maintenance of prey. Cable crossings within the site may require the use of external protection, which could adversely affect supporting habitat with potential for long-term impacts and should be minimised at the project stage. The Outer Thames Estuary SPA (designated for red-throated diver) is also within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species (-2). The Holland Haven Marshes SSSI (designated for aquatic plants, grassland, birds) is within the landfall and onshore route corridor, with limited scope to be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats and disturbance and displacement of species (-2). There are also several designated sites within the route corridor that can be avoided, avoiding the potential for direct impacts. These are the Margate and Long Sands SAC (designated for subtidal sandbanks), North Norfolk Sandbanks and Saturn Reef SAC (subtidal sandbanks) and Hamford Water SPA (designated for non-breeding dark-bellied brent goose, common shelduck, Eurasian teal, pied avocet, ringed plover, grey plover, black-tailed godwit, common redshank and breeding populations of little tern) within the offshore route corridor and the Weeleyhall Wood SSSI (designated for woodland) within the onshore route corridor. There may be potential for indirect impacts on sensitive habitats within the SACs (-2) and for designated birds within the SPA (-1) and onshore habitat (-1), which will need to be considered at the detailed design stage. There are known locations of Annex I reef and Annex I sandbank within the offshore route corridor, which cannot be avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature. There are known areas of ancient woodland within the onshore route corridor, however, these can be avoided (-1).	-2	-2	-2	Direct & Indirect

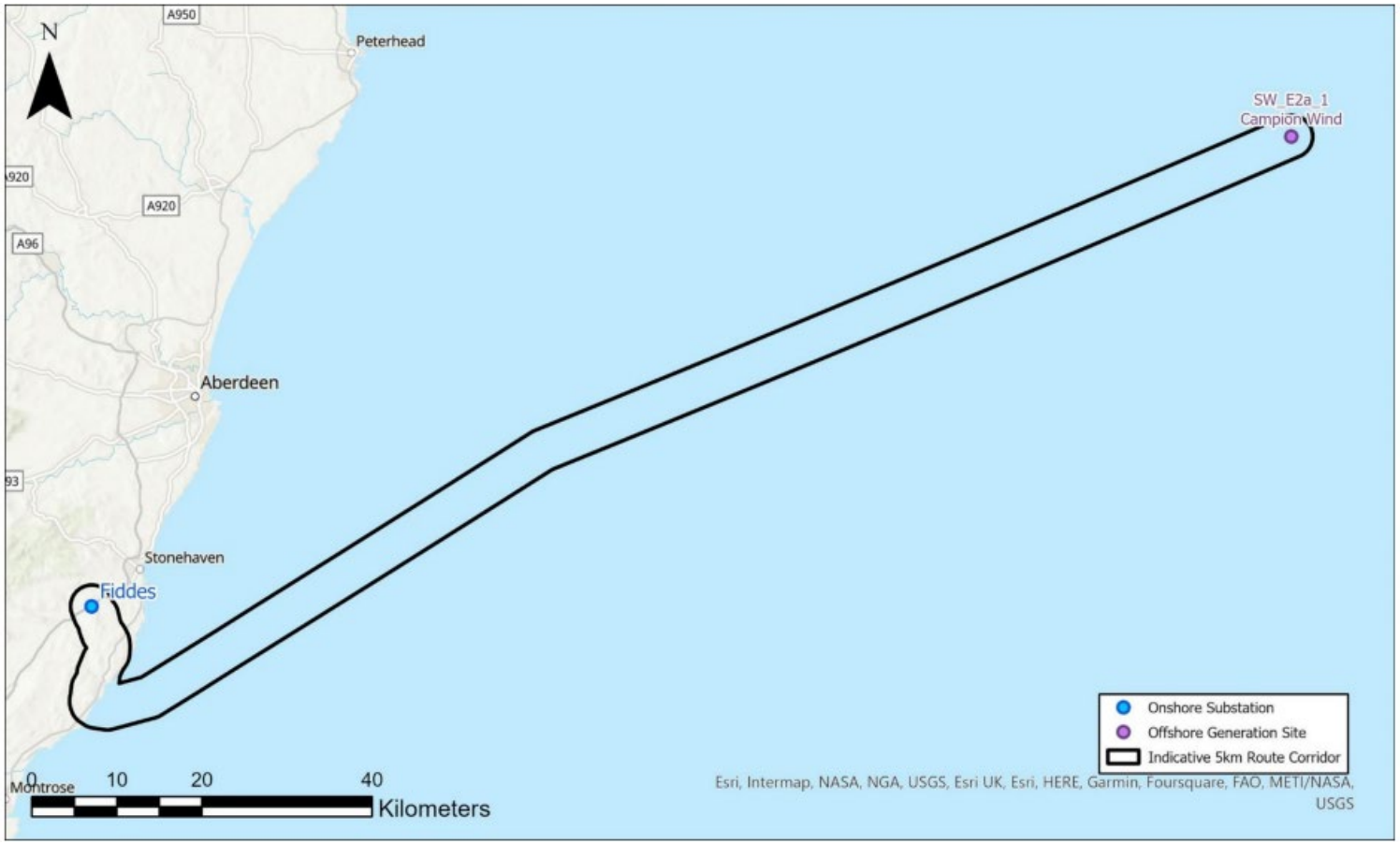
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban areas of Holland-on-Sea and Frinton-on-Sea are within the route corridor at landfall but can be avoided by the cable route within the corridor. The urban areas of Clacton-on-Sea, Little Clacton, Great Holland, and Frinton-on-Sea are within the onshore route corridor and there is limited scope to completely avoid these areas as there is less than a 1km gap between them. There are therefore potential direct short-term impacts of noise and disturbance to many receptors within these higher populated areas during construction and decommissioning phases and during cable maintenance activities (-3). There is also a RYA boating area and three bathing water sites within the offshore landfall route corridors which are unavoidable. There is therefore potential for direct short-term noise, disturbance and water quality impacts to these areas due to mobilised sediments during construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-3	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites, the Holland On Sea Cliff SSSI and a historic landfill site that can be avoided, avoiding the potential for direct impacts (-1). Annex 1 reefs and sandbanks within the 5km indicative route corridor, cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore and areas benefiting from flood defences both onshore and at landfall, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (801.2 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 33 offshore cables, 17 offshore pipelines, high-density shipping areas, three existing energy generation site cables (Galloper, Gabbard OFTO and Gunfleet Sands OFTO), a deep-water/fairway shipping lane, the Staxton Military Area, two traffic separation zones and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads and a railway line located within the onshore portions of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (two diffusers, 60 oil/gas wells, seven oil/gas installations), three existing energy generation sites (Hornsea 1 wind farm, Galloper wind farm and Greater Gabbard wind farm), a dredge and spoil dumping site, a designated anchorage area, an area of dredging, two	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
military areas and five urban areas (Holland-on-Sea, Clacton-on-Sea, Little Clacton, Great Holland and Frinton-on-Sea) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 98 known wreck locations within the offshore route corridor. There is one Scheduled monument and eight listed buildings within the landfall route corridor and one Scheduled monument and 53 listed buildings within the onshore route corridor. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands, or National Trails within the 5km indicative route corridor. The urban areas of Holland-on-Sea and Frinton-on-Sea are within the route corridor at landfall but can be avoided by the cable route within the corridor. The urban areas of Clacton-on-Sea, Little Clacton, Great Holland, and Frinton-on-Sea are within the onshore route corridor and there is limited scope to completely avoid these areas as there is less than a 1km gap between them. There is potential for short-term visual impacts to many receptors within these higher populated areas during construction and decommissioning phases and during cable maintenance activities (-3). In general, there is also potential for short-term impacts on local landscapes and views along the cable route during the construction and decommissioning phases (-1).	-3	0	0	Direct & Indirect
Cumulative and in combination issues				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
. Within the offshore corridor, there is a potential opportunity for coordination with other routes to South East England. The route corridor crosses HND Routes into Birkhill Wood. Offshore the link crosses HND links to Creyke Beck, PA_1 to Hawthorn Pit, SW_E1a to R4_1, SW_E1a to R4_2, HNDFUE link to Richborough and INTOG routes Cedar to Branxton, Cedar to Fetteresso, Cenos to Lackenby, Cenos to Fetteresso and Cenos to Hawthorn Pit. The offshore route passes through a number of gaps between environmental designations and has been developed to avoid the Shallow Sands MCZ, Dogger Bank SAC and North Norfolk Sandbanks and Saturn Reef SAC. The only other known co-located marine cable in the vicinity of the corridor is the cable landfall for Gunfleet Sands offshore wind farm.				

SW_E2a_1 - Fiddes						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E2a_1 Campion	Fiddes	169	1500	2 DC	1	N - HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites (SACs, SPAs, HPMAs, Ramsar, MCZs, SSSIs) within the 5km indicative offshore route corridor or within the route corridor at landfall and onshore. There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that may not be possible to avoid. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term to permanent in nature in the footprint of infrastructure. There are known locations of ancient woodland within the onshore route corridor, however these can be avoided by the cable route within the 5km indicative corridor (-1). There is an area of high density for grey seals within the offshore route corridor, and there are small areas of ancient woodland within the onshore route corridor; however, these areas can be avoided (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The settlement of Inverbervie is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Burn of Benholm SSSI is present onshore but can be avoided, avoiding the potential for direct impacts (-1). However, there are Annex 1 reefs within the 5km indicative route corridor that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W)	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on W within the route corridor. There are rivers within the onshore route corridor, these will need to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; these will need to be crossed, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (169.5 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (two oil/gas wells), onshore infrastructure (two National Grid gas pipelines), a railway line and the Inverbervie urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 17 known wreck locations within the offshore route corridor and one within the route corridor at landfall. There is one Scheduled monument within the route corridor at landfall and one listed building within the onshore route corridor. The Arbuthnott House Park and Garden is also within the onshore route corridor. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust, or National Trails within the 5km indicative route corridor. The settlement of Inverbervie is within the route corridor at landfall and onshore, but can be avoided, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
This landfall is shared with the HND SW_E1a to Fetteresso/Fiddes route. Both offshore and onshore SW_E3 to Fiddes interacts with INTOG route Aspen to Fetteresso, Cedar to Fetteresso and Cenos to Fetteresso, as well as crossing Aspen to Tealing offshore. The HNDFUE connections from SW_E3 and SW_E2a_2 to Fiddes also overlap with this landfall and onshore route. Offshore the route crosses HND routes Sw_E1a to SE_NE7, SW_E1a to Fetteresso and SW_E1b to Peterhead.				

SW_E2a_2 – Fiddes						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_E2a_2 Campion	Fiddes	175	1500	2 DC	1	N - HNDFUE ScotWind
Overview of Route						

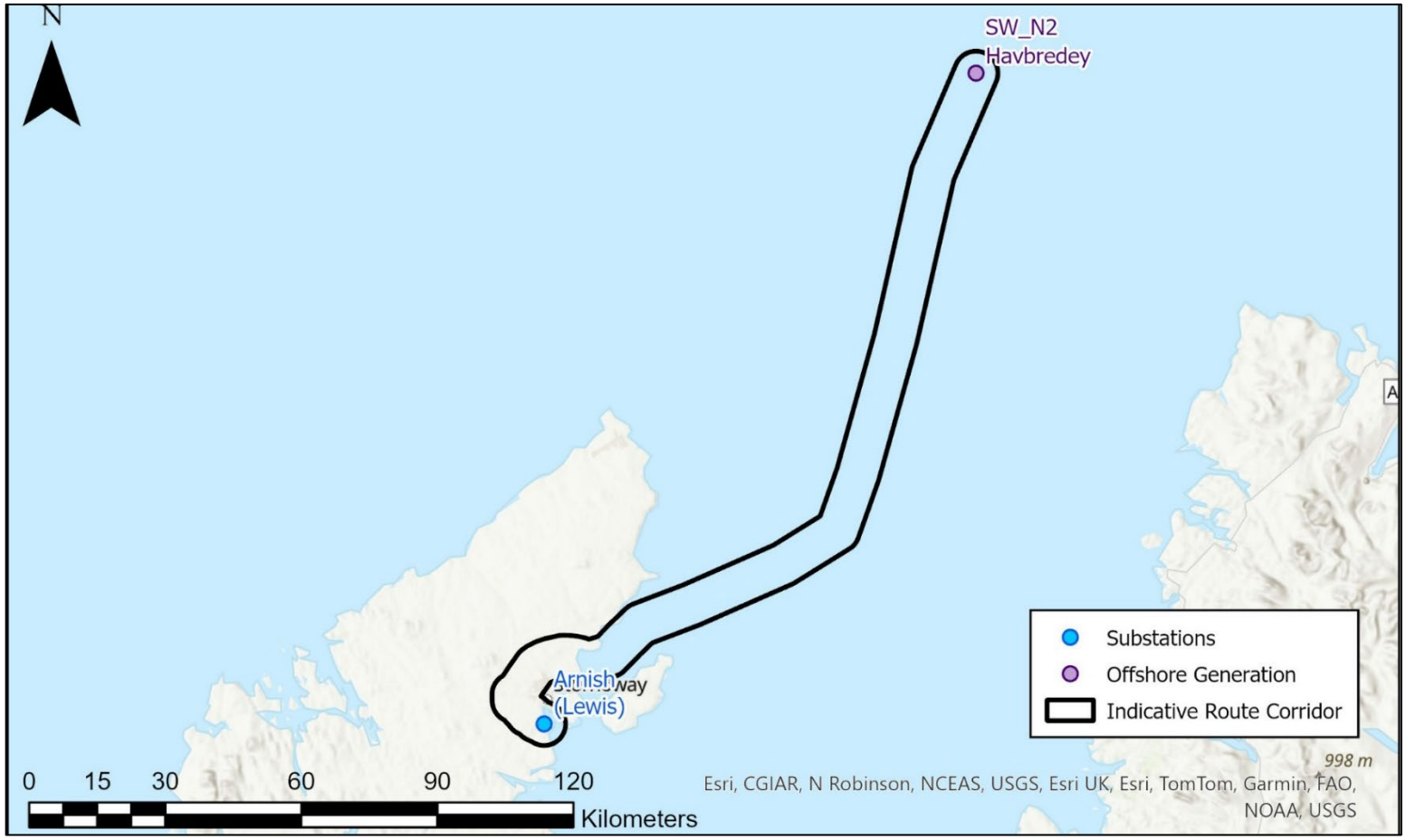


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Firth of Forth Banks Complex MPA (designated for subtidal sands and gravels, shelf banks and mounds, and ocean quahog) is within the 5km indicative offshore route corridor but can be avoided. There may be potential for indirect impacts on the protected features of the site, which should be considered at the detailed design stage (-2). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that may not be possible to avoid. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term to permanent in nature in the footprint of infrastructure. There are known locations of ancient woodland within the onshore route corridor, however these can be avoided by the cable route within the 5km indicative corridor (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Burn of Benholm SSSI present within the route corridor can be avoided, avoiding the potential for direct impacts (-1). The Firth of Forth Banks Complex MPA can potentially be avoided at the design stage (-1), however, the Annex 1 reefs within the 5km indicative route corridor cannot be completely avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W)	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on W within the route corridor. There are rivers within the onshore route corridor, these will need to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; these can be avoided, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one oil/gas well), a railway line and onshore infrastructure (two National Grid gas pipelines) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are 15 known wreck locations within the offshore route corridor and one within the route corridor at landfall. There are two Scheduled monuments within the route corridor at landfall, eight Scheduled monuments and one listed building within the onshore route corridor. The Arbuthnott House Park and Garden is also within the onshore route corridor. However, these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust, or National Trails within the 5km indicative route corridor. There are also no urban areas or major settlements within the route corridor. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
This landfall is shared with the HND SW_E1a to Fetteresso/Fiddes route. Both offshore and onshore SW_E3 to Fiddes interacts with INTOG route Aspen to Fetteresso, Cedar to Fetteresso and Cenos to Fetteresso, as well as crossing Aspen to Tealing offshore. The HNDFUE connections from SW_E3 and SW_E2a_1 to Fiddes also overlap with this landfall and onshore route. Offshore the route crosses HND routes Sw_E1a to SE_NE7, SW_E1a to Fetteresso and SW_E1b to Peterhead.				

SW_N2 - Arnish						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
SW_N2 Havbredey	Arnish	104	1500	3 AC	3	N – HNDFUE ScotWind
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Inner Hebrides and the Minches SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be completely avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of harbour porpoise and damage to supporting habitat (-2). The cable distance through the site is minimised, however, potential impacts and mitigation will need to be considered at the detailed design stage. The North-East Lewis MPA (designated, in part, for Risso's dolphin and sand eels) is within the route corridor offshore and at landfall and cannot be avoided by the cable route. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated species and damage to habitat (-2). Risso's dolphins and Sandeels have been identified as sensitive to pressures associated with cabling activities. Potential impacts and mitigation will need to be considered at the detailed design stage. The Lewis Peatlands SAC (designated for bog, lake and heathland habitats and otter species) and the Lewis Peatlands SPA (designated for breeding Black-throated diver, Dunlin, Golden Eagle, Golden plover, Greenshank, Merlin and Red-throated diver) and Ramsar site are within the onshore 5km indicative route corridor but can be avoided, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities (-1), which will need to be considered at the detailed design stage. The Gress Saltings SSSI (designated for saltmarsh) is within the offshore route corridor, while the Tong Saltings SSSI (designated for a breeding bird assemblage, mudflats, saltmarsh and sand dunes) is within the route corridor at landfall and onshore. However, both sites can be avoided by the cable route within the cable corridor. The potential for indirect impacts on these sites will need to be considered at the detailed design stage (-1). The Stornoway to Back, Lewis IBA is within the route corridor at landfall and onshore, while the Lewis Peatlands IBA is also within the onshore route corridor. The cable routing distance within these areas can be minimised but they cannot be completely avoided. There is potential for short-term direct and indirect impacts on bird species and supporting habitats within the construction and decommissioning phases and during cable maintenance activities (-1). There are known locations of Annex I reef within the offshore route corridor and at landfall and known locations of Annex I saltmarsh within the onshore route corridor, however, these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-	-2	0	0	Direct & Indirect

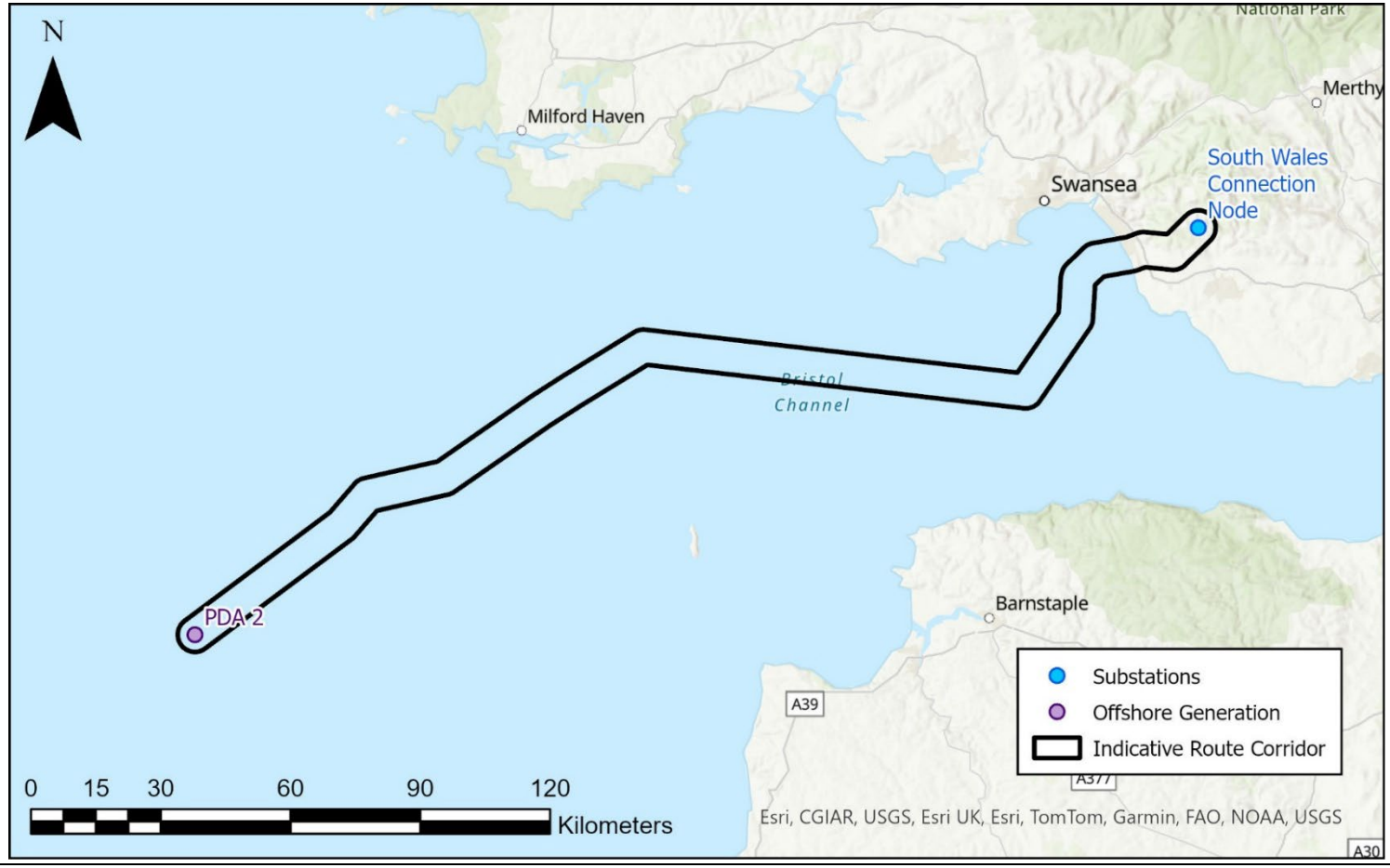
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
term construction and decommissioning phases and during any cable maintenance activities depending on proximity and impact pathways (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban areas of Bac and Tunga are within the landfall and onshore route corridor, and the area of Stornoway is also within the onshore route corridor; however, these areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The North-east Lewis MPA is within the 5km indicative route corridor, which cannot be completely avoided (-2). There are Annex 1 reefs present offshore and at landfall but can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily moderate to poor quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be completely avoided within the route corridor and there is limited scope to avoid these at landfall; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; there is limited scope to completely avoid these	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
onshore, but there is potential to avoid these at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the onshore route corridor, however these can be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one designated anchorage area and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There are three urban areas (Stornoway, Bac and Tunga), Stornoway Port and Stornoway Marina, located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, listed buildings, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are seven known wreck locations within the offshore route corridor and four Scheduled monuments within the onshore route corridor. However, all of these sensitive areas can be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The Lews Castle and Lady Lever Park Garden and Designed Landscape is within the onshore route corridor but can be avoided. There may be potential for short-term indirect impacts on the setting within this sensitive area during the construction and decommissioning phases (-1). The urban areas of Bac and Tunga are within the landfall and onshore route corridor and the area of Stornoway is also within the onshore route corridor; however, these areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The HND SW_N4 to Arnish and the Arnish to Beauly HVDC link are two projects that may be competing for space with the HNDFUE SW_N2 to Arnish link. There may also be potential coordination required with the HNDFUE route from SW_N3 to Arnish. There is a proposal for a major housing development at Newmarket on the northern edge of Greater Stornoway which may impact the onshore cable route around Stornoway.				

F.1.3 HNDFUE Celtic Sea Routes

PDA2 - South Wales Connection Node						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA2	South Wales Connection Node	171	1500	2 DC	1	Y - HNDFUE Celtic Sea
Overview of Route						



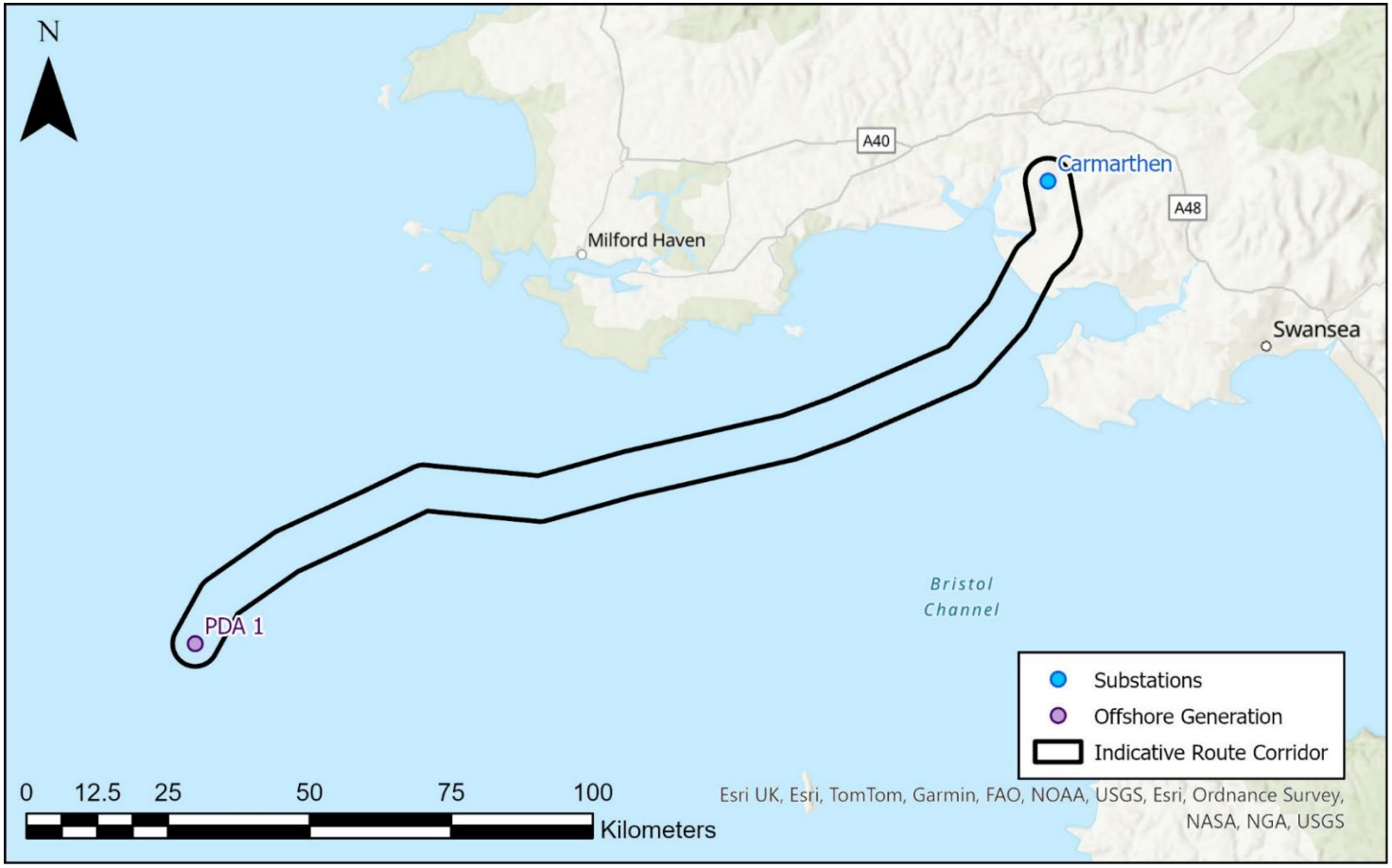
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Bristol Channel Approaches SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species (-2). The Kenfig / Cynffig SAC (designated for Atlantic salt meadows), Kenfig / Cynffig SSSI, and Margam Moors SSSI are within the route corridor at landfall and onshore, while the Eglwys Nunydd Reservoir SSSI and Waun Cimla SSSI are also within the onshore route corridor. These sites can all be avoided by the cable route, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-1). There are known locations of NRW Key sensitive habitats (peat & clay exposures) within the offshore route corridor and the route corridor at landfall. These areas can be avoided, avoiding the potential for direct impacts (-1); the potential for indirect impacts will need to be considered at the detailed design stage. There are known locations of Annex I reef within the offshore and landfall route corridor and known locations of Annex I sandbank within the offshore route corridor. The offshore areas of these habitats cannot be avoided, and there is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature (-2). There are also known areas of ancient woodland within the onshore route corridor which there is limited scope to avoid, and there is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Port Talbot is within the route corridor at landfall and onshore and the urban area of Pyle is also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs at landfall and onshore historic landfill sites that can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent agricultural land within the onshore route corridor. The agricultural lands are primarily of very good quality that has the potential to be avoided, with other areas of good, moderate and poor quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor. There are known locations of Air Quality Management Areas (AQMA) within the onshore route corridor, however these can be avoided (-1). There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as nine offshore cables and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, numerous roads and Baglan Energy Park are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is the Scarweather Sands Met Mast, high-density shipping areas, the Manorbier Military Area, a dredging navigation area and two urban areas (Sandfields and Port Talbot) are located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs or Conservation Areas within the 5km indicative route corridor. There are 22 known wreck locations within the offshore route corridor and one within the route corridor at landfall. There are also 20 Scheduled monuments and 73 listed building within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. The Margam Park Park/Garden is within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban area of Port Talbot is within the route corridor at landfall and onshore and the urban area of Pyle is also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There are no known cumulative or in combination constraints associated with the route corridor from PDA2 to South Wales Connection Node.				

PDA1 - Carmarthen						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA1	Carmarthen	116	1500	3 AC	3	Y - HNDFUE Celtic Sea
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Bristol Channel Approaches SAC (designated for harbour porpoise) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species (-2). The Carmarthen Bay and Estuaries SAC (designated for estuaries, subtidal sandbanks, mudflats and sandflats, shallow inlets and bays, Salicornia habitat, Atlantic salt meadows, Twaite and allis shad, river and sea lamprey and otter) is within the offshore and landfall route corridor and cannot be avoided and there is potential for direct and indirect impacts on the designated site features including damage and disturbance in the construction and decommissioning phases and during cable maintenance activities (-2); for some sensitive benthic habitats features, recovery may be long-term. The Carmarthen Bay SPA (designated for common scoter) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of designated bird species and damage to supporting habitats and displacement of prey species (-2). The Pembrey Coast SSSI (designated for intertidal, saltmarsh and sand dune habitats) is also within the offshore and landfall route corridor and cannot be avoided and there is potential for direct and indirect impacts on the designated site features including damage and disturbance in the construction and decommissioning phases and during cable maintenance activities (-2). The West Wales Marine SAC (designated for harbour porpoise), Pembrokeshire Marine SAC (designated for eight marine habitats and ten species), and Skomer, Skokholm and the Seas off Pembrokeshire SPA (designated for European storm-petrel, Manx shearwater, Atlantic Puffin, and Lesser Black-backed Gull, as well as Red-billed Chough, Short-eared Owl and important breeding seabird assemblage) are within the offshore 5km indicative route corridor, and the Carmarthen Bay and Estuaries SAC within the onshore route corridor, but can be avoided, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-2). The Pembrey Coast SSSI, Coed Gwempa SSSI, Cwm Clydach, Cydweli SSSI, Gwernydd Penbre SSSI and Smarts Quarry SSSI are also within the onshore 5km indicative route corridor. All of these sites can be avoided by the cable route, however the potential for indirect impacts on site features will need to be considered at the project stage.	-3	-3	-2	Direct & Indirect

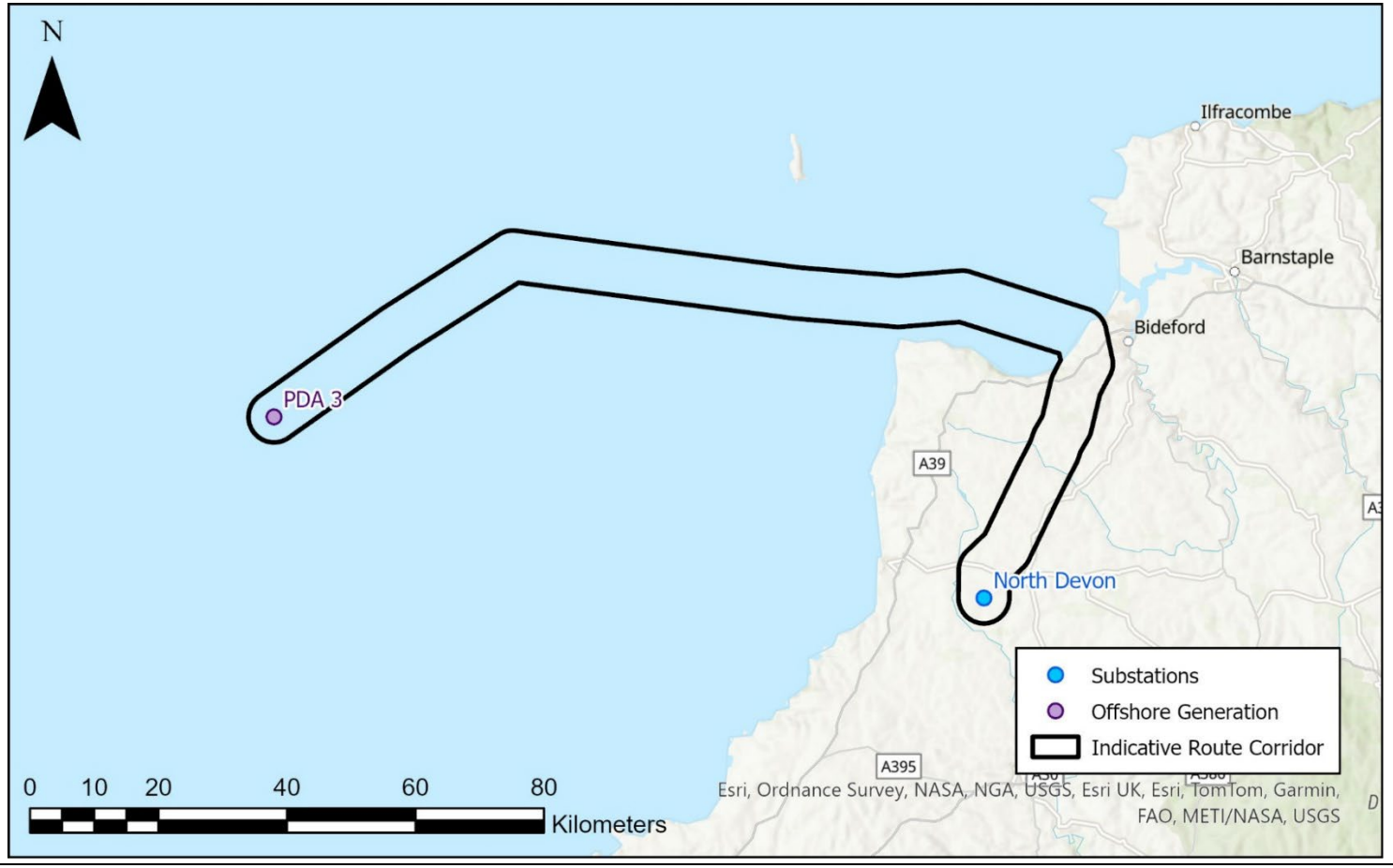
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are known locations of NRW Key sensitive habitats (large shallow inlets and bays, mudflats and sandflats not covered by seawater at low tide, seagrass beds) within the offshore, landfall and onshore route corridor. Areas offshore and at landfall cannot be avoided and there is potential for direct and indirect impacts on the designated site features including damage and disturbance in the construction and decommissioning phases and during cable maintenance activities (-3); for some sensitive benthic habitat features, recovery may be long-term. There are known locations of Annex I reef within the offshore route corridor, however these can be avoided by the cable route, avoiding the potential for direct impacts. There are also known areas of ancient woodland within the onshore route corridor that can be avoided by the cable route. The Carmarthen Bay IBA is within the offshore and landfall route corridor and cannot be avoided and there is potential for direct and indirect impacts on birds and supporting habitat within this area. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban areas of Pembrey and Kidwelly are within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). The Pembrey bathing water site is located at landfall within the offshore route corridor and is avoidable. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the bathing water site during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Smarts Quarry SSSI within the 5km indicative route corridor can be avoided, avoiding the potential for direct impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands that are very good quality can be avoided (-1) while the rest is primarily good quality with	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
other areas of moderate quality (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these at landfall, and these can be avoided within the route corridor, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, there is potential to avoid these at landfall, but within the onshore route these cannot be completely avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided and would need to be crossed, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as six offshore cables and four military areas (Castlemartin, Manorbrier, Pendine and Pembrey) are also located within the 5km indicative route corridor and cannot be avoided. Additionally, two railway lines and numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is the South Pembrokeshire Demonstration Zone, and two urban areas (Pembrey and Kidwelly) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) The potential for significant negative effects on CH can be avoided within the route corridor. There are no WHS, registered battlefields, historic MPAs or Conservation Areas within the 5km indicative route corridor. There are 19 known wreck locations within the offshore route corridor and one within the route corridor at landfall, which can all be avoided by the cable route within the corridor. There are also 15 Scheduled monuments and 34 listed buildings within the onshore route corridor. The Llechdwnni Park/Garden is also within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L)	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The potential for direct negative impacts on L can be avoided within the route corridor. There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban areas of Pembrey and Kidwelly are within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
The route from PDA1 to Carmarthen crosses the Llyr Wind Farm Cables.				

PDA3 – North Devon						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA3	North Devon	113	1500	3 AC	3 AC	Y - HNDFUE Celtic Sea
Overview of Route						



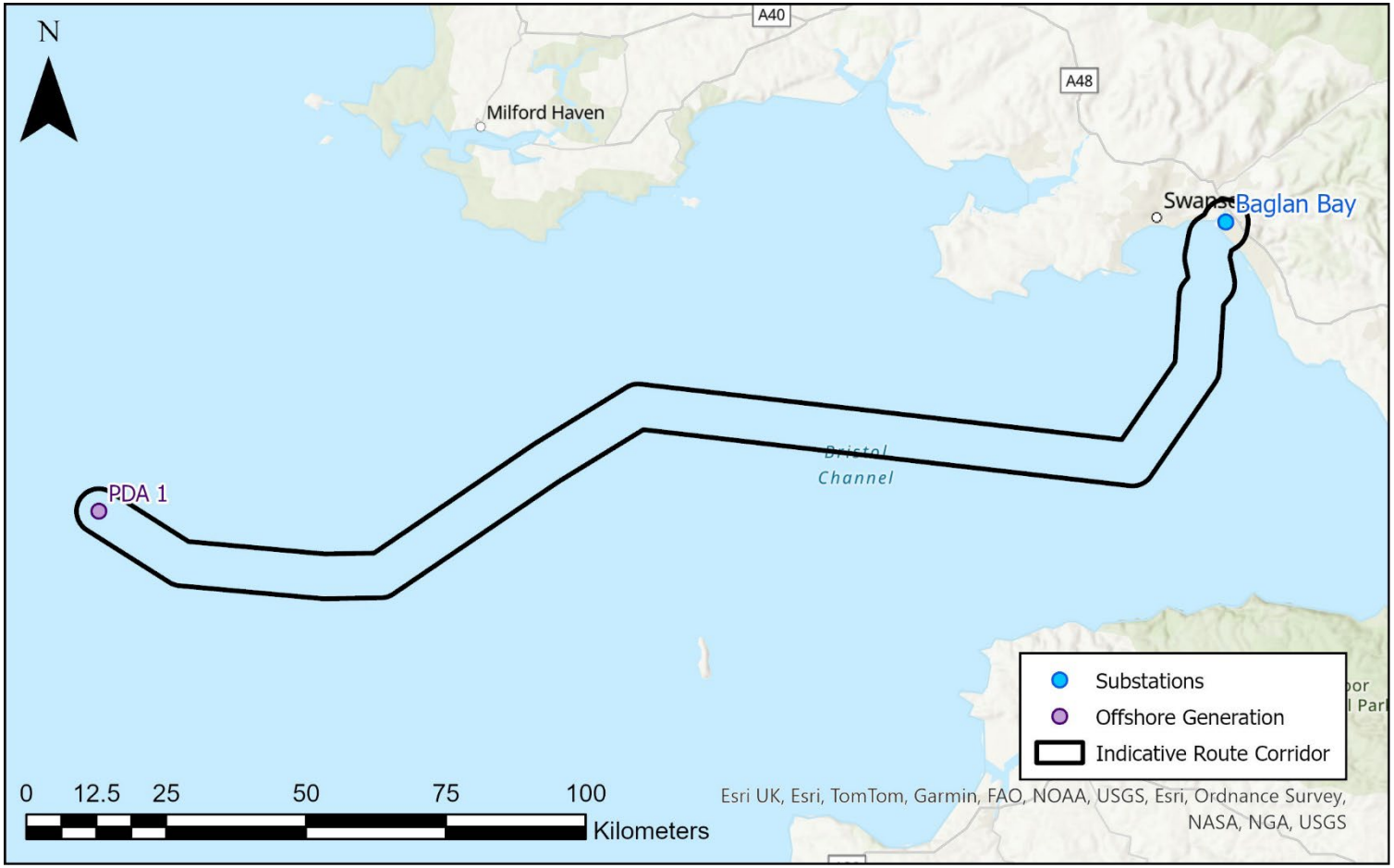
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Bristol Channel Approaches SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species (-2). The Mermaid's Pool to Rowden Gut SSSI and Westward Ho! Cliffs SSSI are within the route corridor at landfall; these may be possible to avoid but the potential is limited owing to the small 80m gap between sites. There may be potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities (-2). The Bideford to Foreland Point MCZ (designated for a wide range of habitats including intertidal sand, subtidal sediment and rock) is within the offshore and landfall route corridor but can be avoided. The Culm Grasslands SAC (designated for Molinia meadows), Dunsdon Farm SSSI, Kingford Fen SSSI, Kismeldon Meadows SSSI, Mambury and Stowford Moors SSSI, Small Brook SSSI, Common Moor, and East Putford SSSI are also within the onshore route corridor but can be avoided. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore and landfall route corridor. The landfall areas cannot be avoided, and there is potential for direct and indirect impacts on this habitat during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature (-2). There are also known areas of ancient woodland within the onshore route corridor, however, these can be avoided, avoiding the potential for direct impacts. The North Devon Biosphere reserve is within the offshore, landfall and onshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Bideford is within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). The Westward Ho bathing waters are located	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
within the offshore and in the northern part of the landfall route corridors, but this area can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the bathing waters during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs offshore which can be avoided, avoiding the potential for direct impacts (-1). The offshore Westward Ho! Cliffs SSSI can be avoided, however, the remainder of the landfall is occupied by the Mermaids Pool and Rowden Gut SSSI. It should be noted there is a c.80m gap between these two designations (-2). There are also Annex 1 reefs at landfall that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of good quality with the ability to avoid the very good quality land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	*-2*	*-2*	*-2*	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, there is potential to avoid these, avoiding the potential for direct impacts. There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as five offshore cables are located within the 5km indicative route corridor and cannot be avoided. Additionally, a National Grid overhead line and numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one diffuser) and the Bideford urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Parks and Gardens or Conservation Areas within the 5km indicative route corridor. There are nine known wreck locations within the offshore route corridor and two within the route corridor at landfall, which are all avoidable by the cable route within the corridor, avoiding the	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
potential for direct impacts. There is one Scheduled monument within the route corridor at landfall and 16 within the onshore route corridor. There are also 27 listed buildings within the route corridor at landfall and 125 within the onshore route corridor. However, these assets can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) The North Devon AONB is within the route corridor at landfall and onshore and cannot be avoided by the cable route. The Hartland Heritage Coast is within the route corridor offshore, at landfall and onshore and cannot be avoided. The South West Coastal Path is also within the route corridor at landfall and onshore and cannot be avoided. There is potential for short-term direct and indirect impacts on landscape and views within these sensitive areas during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the project stage (-2). The urban area of Bideford is within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect
Cumulative and in combination issues				
The route from PDA3 to North Devon makes landfall in the same location as X-links and coordination will be required. The route is similar to the route PDA2 to North Devon and coordination may be required if these occur together in a design.				

PDA1 - Baglan Bay						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA1	Baglan Bay	153	3000	4 DC	2	N - HNDFUE Celtic Sea
Overview of Route						



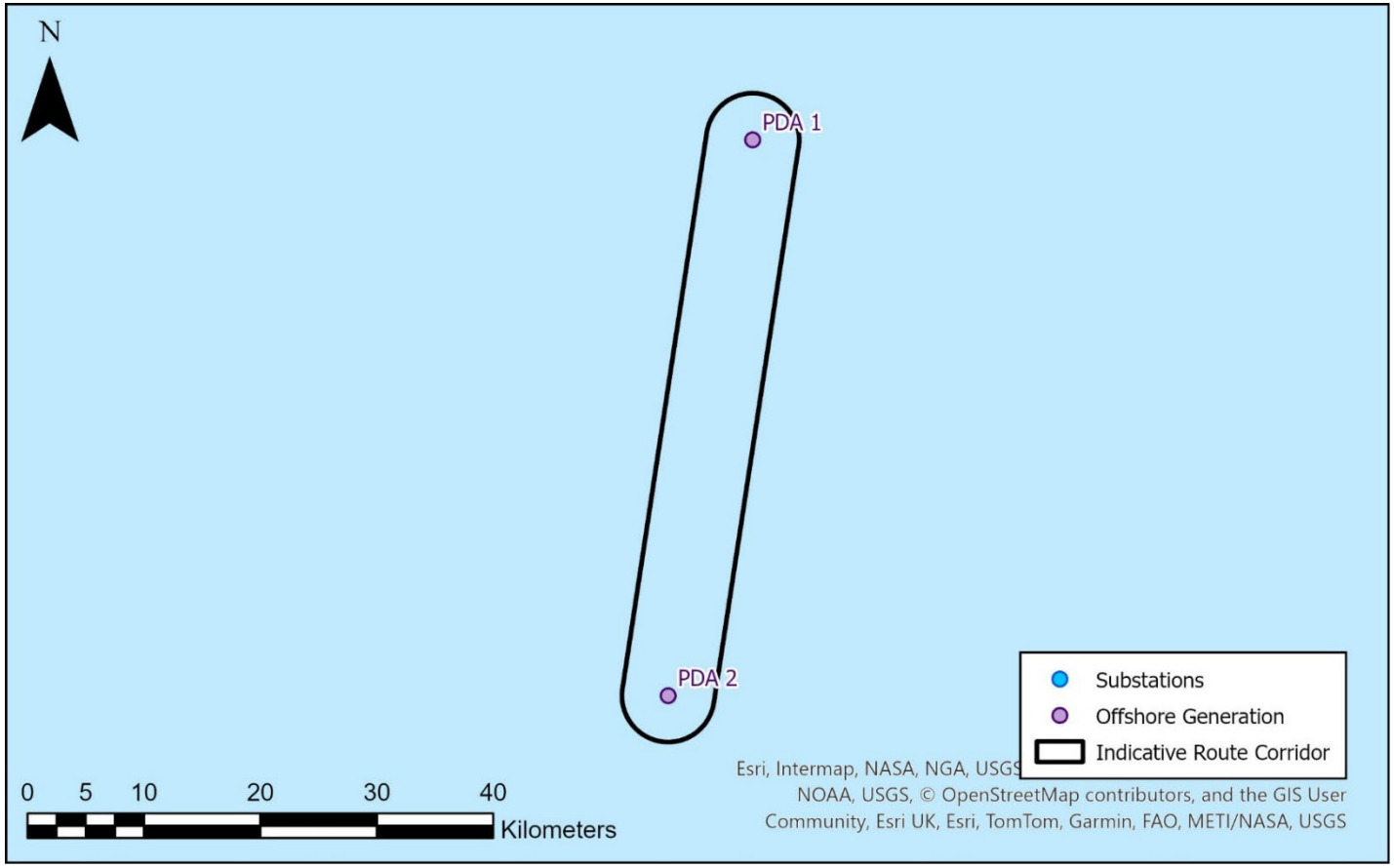
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Bristol Channel Approaches SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species (-2). The Crymlyn Burrows SSSI (designated for dune, saltmarsh and beach) is within the route corridor at landfall and onshore but can be avoided by the cable route, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of this site during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore and landfall route corridor and known locations of Annex I sandbank within the offshore route corridor. The offshore areas of these habitats cannot be avoided, and there is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban areas of Sandfields, Port Talbot and the Baglan Energy Park are within the route corridor at landfall and onshore. The Baglan Energy Park area cannot be avoided by the cable route within the corridor, and there is potential for short-term noise and disturbance effects to many receptors within this higher populated area (-2). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs at landfall which can be avoided, avoiding the potential for direct impacts (-1). However, there are also Annex 1 reefs and sandbanks offshore that cannot be avoided (-2). There is potential for short-term temporary	*-2*	*-2*	*-2*	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of very poor quality and good to moderate quality with the ability to avoid any very good quality land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are areas benefitting from flood defences within the onshore route corridor and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as eight offshore cables and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, and the Baglan Energy Park located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There are high-density shipping areas, the Scarweather Sands Met Mast, the Manorbrier Military Area, a dredging navigation area and two urban areas (Sandfields and Port Talbot) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Conservation Areas, Scheduled monuments or listed buildings within the 5km indicative route corridor. There are 27 known wreck locations within the offshore route corridor and two within the route corridor at landfall. However, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban areas of Sandfields, Port Talbot and the Baglan Energy Park are within the route corridor at landfall and onshore. The Baglan Energy Park area cannot be avoided by the cable route within	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
the corridor, and there is potential for short-term visual effects to many receptors within this higher populated area (-2). In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
There are no known cumulative or in combination constraints associated with the route corridor from PDA1 to Baglan Bay.				

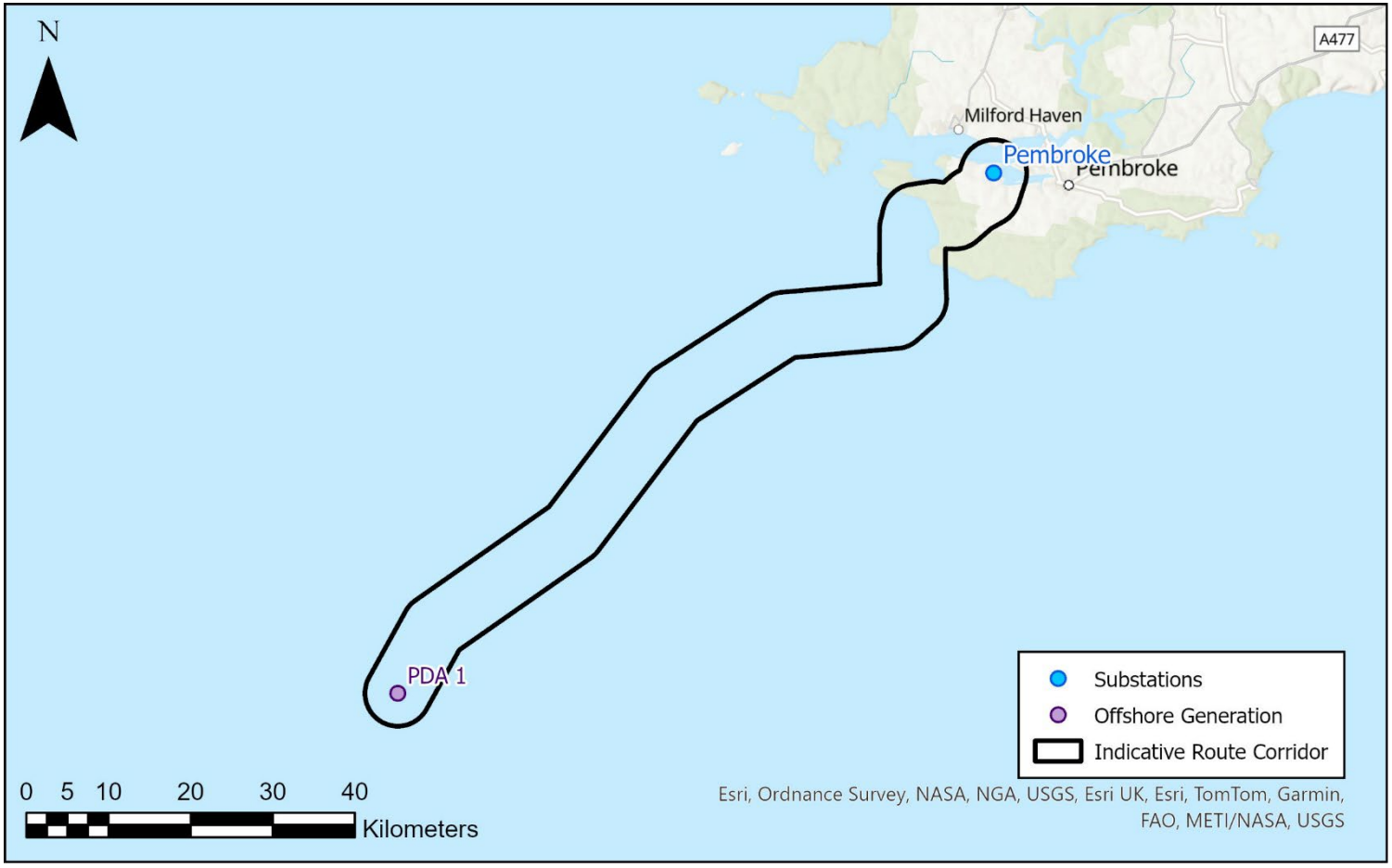
PDA1 - PDA2						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA1	PDA2	30	1500	3 AC	3	N - HNDFUE Celtic Sea
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as three offshore cables are located within the 5km indicative route corridor and cannot be avoided. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There is one known wreck location within the route corridor, which is located entirely offshore. This asset is avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect
Cumulative and in combination issues				
No cumulative or in combination constraints within the PDA1_PDA2 5km indicative route corridor.				

PDA1 - Pembroke						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA1	Pembroke	65	1500	3 AC	3	N - HNDFUE Celtic Sea
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The West Wales Marine SAC (designated for harbour porpoise), Pembrokeshire Marine SAC (designated for eight marine habitats and ten species), and Skomer, Skokholm and the Seas off Pembrokeshire SPA (designated for European storm-petrel, Manx shearwater, Atlantic Puffin, and Lesser Black-backed Gull, as well as Red-billed Chough, Short-eared Owl and important breeding seabird assemblage) are within the offshore 5km indicative route corridor and cannot be avoided. The Arfordir Penrhyn Angle / Angle Peninsula Coast SSSI (designated for intertidal habitats and chough), Broomhill Burrows SSSI (designated for habitats such as dunes and cliffs and chough) and Castlemartin Range SSSI (designated for marine biology, dunes, wetlands, grasslands, and heath) are within the offshore, landfall and onshore route corridor; it is not possible to avoid each of these sites without passing through another. Similarly, the Limestone Coast off South West Wales/ Arfordir Calchfaen de Orllewin Cymru SAC (designated for sea cliffs and dunes) can only be avoided by passing through NRW sensitive reef habitat. There is potential for short-term direct or indirect impacts on protected features within these sites (-2). The Castlemartin Coast SPA (designated for breeding red-billed chough) is within the offshore and landfall route corridor, and the Castlemartin Coast SSSI is within the landfall route corridor, but these sites can be avoided (-1). The Pembrokeshire Marine SAC, West Wales Marine SAC and Castlemartin Coarse SSSI (designated for fen) are also within the onshore route corridor but can be avoided. The potential for indirect impacts on site features will need to be considered at the project stage (-1). There are known locations of NRW Key sensitive habitats, including mudflats and sandflats not covered by seawater at low tide, reefs and sandbanks within the offshore route corridor and mudflats and sandflats and reef at landfall route; sandbanks can be avoided; however, it is not possible to avoid the reefs or mudflats and sandflats without crossing the other. There is potential for direct and indirect impacts on these sensitive habitats, including loss or damage (-3). There are known locations of Annex I sandbank within the offshore route corridor and Annex I reef within the offshore and landfall route corridor, which there is limited scope to avoid. There is potential for direct and indirect impacts on these sensitive habitats, including damage or loss in the footprint of infrastructure (-2). There are also known areas of ancient woodland within the onshore route corridor that can be avoided by the cable route.	-3	-2	-2	Direct & Indirect

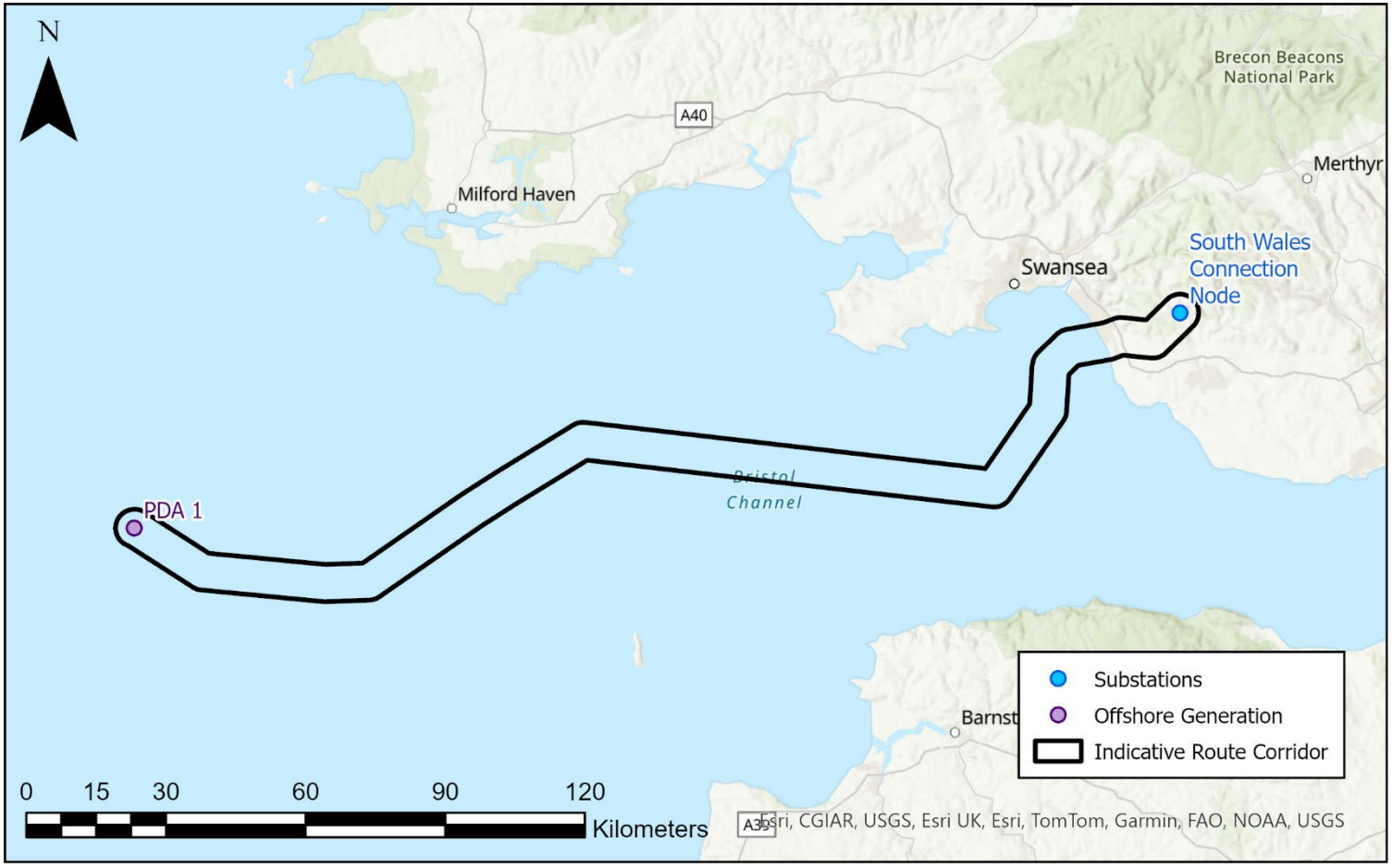
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban area of Rhoscrowther is within the landfall and onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). The Freshwater West bathing water area is located within the offshore and landfall route corridors; however this area can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the bathing water area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites and historic landfill sites which can be avoided, avoiding the potential for direct impacts (-1). There is potential to avoid the Castlemartin Range SSSI, however, this would require passing through the Arfordir Penrhyn Angle / Angle Peninsula Coast SSSI or the Broomhill Burrows SSSI (-2). The Annex 1 reefs and sandbanks cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of very good and good quality which will be difficult to avoid (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	*-2*	*-2*	*-2*	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these rivers will need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
decommissioning phases, as well as during any cable maintenance activities (-1). There is a dredge and spoil dumping site offshore, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as four offshore cables, two Military Areas (D113A Castlemartin and D113B Castlemartin) and two existing offshore energy cables (Llyr wind farm and Greenlink cable) are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is an existing offshore energy demonstration site (META Phase 2 – East Pickard Bay), the Castlemartin Ranges Onshore Military Area, onshore infrastructure (National Grid towers, substations and overhead lines) and Rhoscrowther urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs or Conservation Areas within the 5km indicative route corridor. There are 13 known wreck locations within the offshore route corridor and four within the route corridor at landfall, which are all avoidable by the cable route within the corridor, avoiding the potential for direct impacts. There are eight Scheduled monuments within the route corridor at landfall and 18 within the onshore route corridor. There are also six listed buildings within the route corridor at landfall and 35 within the onshore route corridor, and the Park and Garden of Orielton Park is also within the onshore route corridor. However, these assets can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the design stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The South Pembrokeshire Heritage Coast is within the route corridor offshore and at landfall and cannot be avoided by the cable route. The Pembrokeshire Coast National Trail and Pembrokeshire Coast National Park are also within the route corridor at landfall and onshore and cannot be avoided. There is potential for short-term direct and indirect impacts on landscape and views within these sensitive areas during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the project stage (-2). The Kete National Trust lands are within the landfall and onshore route corridor but can be avoided. There may be potential for indirect impacts on landscape and views within this area. The urban area of Rhoscrowther is within the landfall and onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within this higher populated area.	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
The route corridor from PDA1 to Pembroke is broadly similar to that of the proposed Llyr OWF and the Greenlink Interconnector in the vicinity of Freshwater West and consequently has the potential to result in cumulative or in combination constraints.				

PDA1 – South Wales Connection Node						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA1	South Wales Connection Node	161	3000	4 DC	2	N - HNDFUE Celtic Sea
Overview of Route						



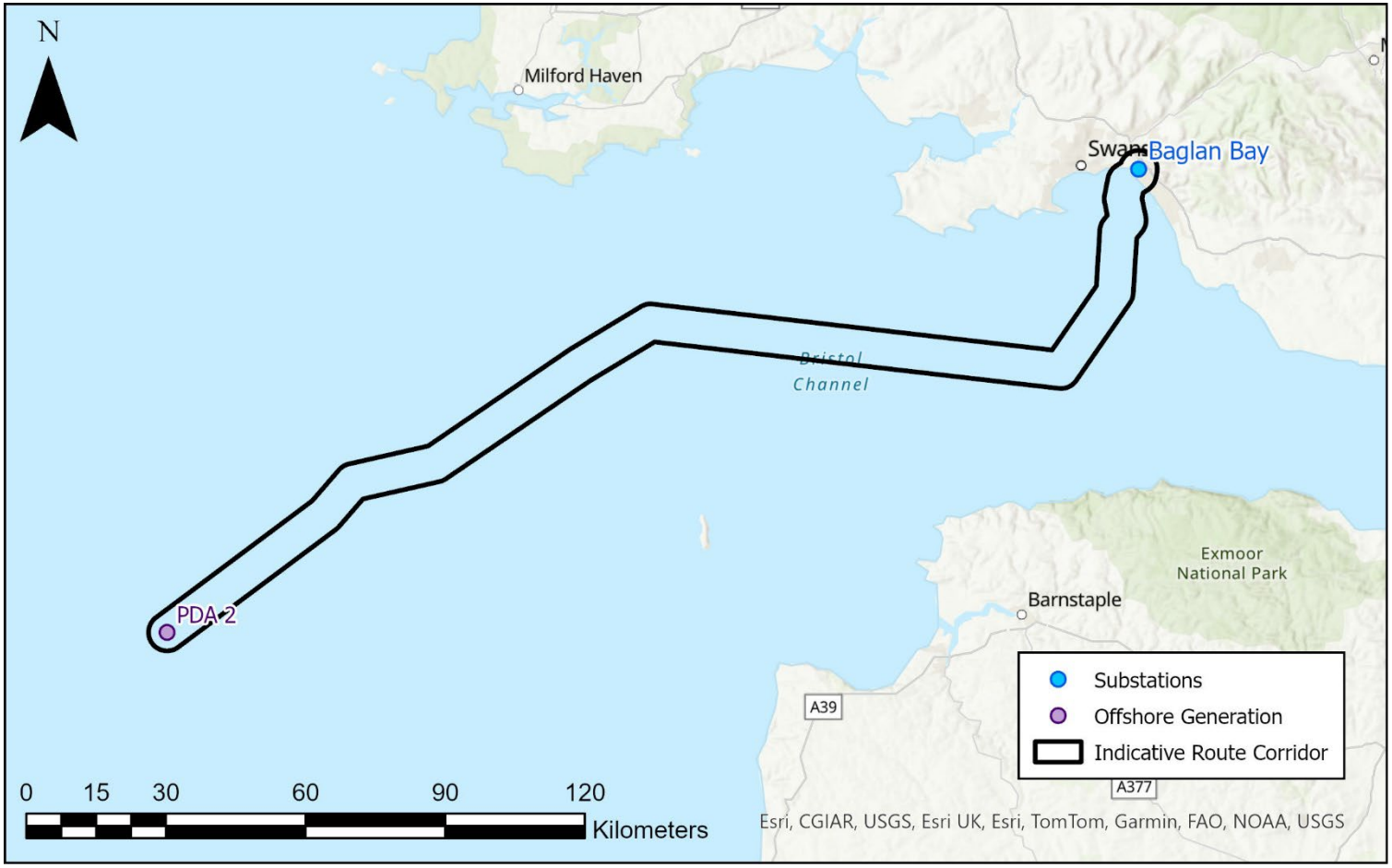
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Bristol Channel Approaches SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species (-2). The Kenfig / Cynffig SAC (designated for Atlantic salt meadows), Kenfig / Cynffig SSSI, and Margam Moors SSSI are within the route corridor at landfall and onshore, while the Eglwys Nunydd Reservoir SSSI and Waun Cimla SSSI are also within the onshore route corridor. These sites can all be avoided by the cable route, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-1). There are known locations of NRW Key sensitive habitats (peat & clay exposures) within the offshore route corridor and the route corridor at landfall. These areas can be avoided, avoiding the potential for direct impacts (-1); the potential for indirect impacts will need to be considered at the detailed design stage. There are known locations of Annex I reef within the offshore and landfall route corridor and known locations of Annex I sandbank within the offshore route corridor. The offshore areas of these habitats cannot be avoided, and there is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature in the footprint of the infrastructure (-2). There are also known areas of ancient woodland within the onshore route corridor which there is limited scope to avoid, and there is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Port Talbot is within the route corridor at landfall and onshore and the urban area of Pyle is also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs at landfall and onshore historic landfill sites which can be avoided, avoiding the potential for direct impacts (-1). There are also offshore Annex 1 reefs and sandbanks that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The route corridor is made up of a variety of good to poor agricultural land. There is the potential to avoid the areas of very good quality agricultural land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There is a lake within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid this, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor. There are known locations of Air Quality Management Areas (AQMA) within the onshore route corridor, however these can be avoided (-1). There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as eight offshore cables are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, a railway line and onshore infrastructure (National Grid towers and overhead line) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There are high-density shipping areas, high-density fishing areas, Port Talbot Port, the Scarweather Sands Met Mast, the Manorbier Military Area, Graig Fawr 'Chain Home Low' Radar Station (onshore military area) and two urban areas (Port Talbot and Pyle) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs or Conservation Areas within the 5km indicative route corridor. There are 21 known wreck locations within the offshore route corridor and one within the route corridor at landfall. There are also 20 Scheduled monuments and 73 listed building within the onshore route corridor.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. The Margam Park Park/Garden is within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban area of Port Talbot is within the route corridor at landfall and onshore and the urban area of Pyle is also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
There are no known cumulative or in combination constraints associated with the route corridor from PDA1 to South Wales Connection Node.				

PDA2 - Baglan Bay						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA2	Baglan Bay	166	1500	2 DC	1	N - HNDFUE Celtic Sea
Overview of Route						



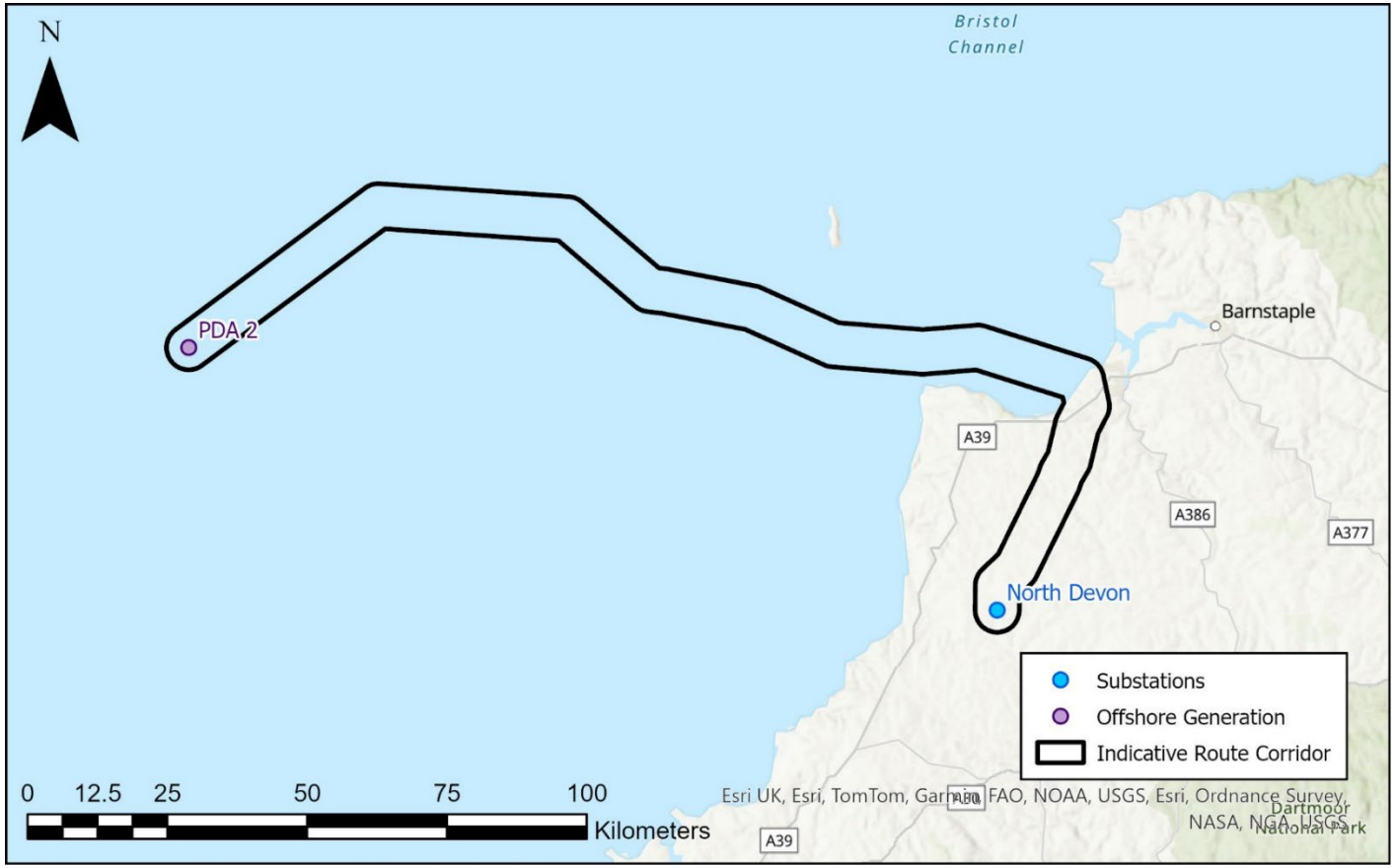
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Bristol Channel Approaches SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species (-2). The Crymlyn Burrows SSSI (designated for dune, saltmarsh and beach) is within the route corridor at landfall and onshore but can be avoided by the cable route, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of this site during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore and landfall route corridor and known locations of Annex I sandbank within the offshore route corridor. The offshore areas of these habitats cannot be avoided, and there is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban areas of Sandfields, Port Talbot and the Baglan Energy Park are within the route corridor at landfall and onshore. The Baglan Energy Park area cannot be avoided by the cable route within the corridor, and there potential for short-term noise and disturbance effects to many receptors within this higher populated area (-2). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs at landfall which can be avoided, avoiding the potential for direct impacts (-1). However, there are also Annex 1 reefs and sandbanks offshore that cannot be avoided (-2). There is potential for short-term temporary	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of very poor quality and good to moderate quality with the ability to avoid any very good quality land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are areas benefitting from flood defences within the onshore route corridor and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as nine offshore cables and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, and the Baglan Energy Park located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There are high-density shipping areas, the Scarweather Sands Met Mast, the Manorbrier Military Area, a dredging navigation area and two urban areas (Sandfields and Port Talbot) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Conservation Areas, Scheduled monuments or listed buildings within the 5km indicative route corridor. There are 25 known wreck locations within the offshore route corridor and two within the route corridor at landfall. However, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban areas of Sandfields, Port Talbot and the Baglan Energy Park are within the route corridor at landfall and onshore. The Baglan Energy Park area cannot be avoided by the cable route within	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
the corridor, and there is potential for short-term visual effects to many receptors within this higher populated area (-2). In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
There are no known cumulative or in combination constraints associated with the route corridor from PDA2 to Baglan Bay.				

PDA2 – North Devon						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA2	North Devon	139	1500	3 AC	3	N - HNDFUE Celtic Sea
Overview of Route						



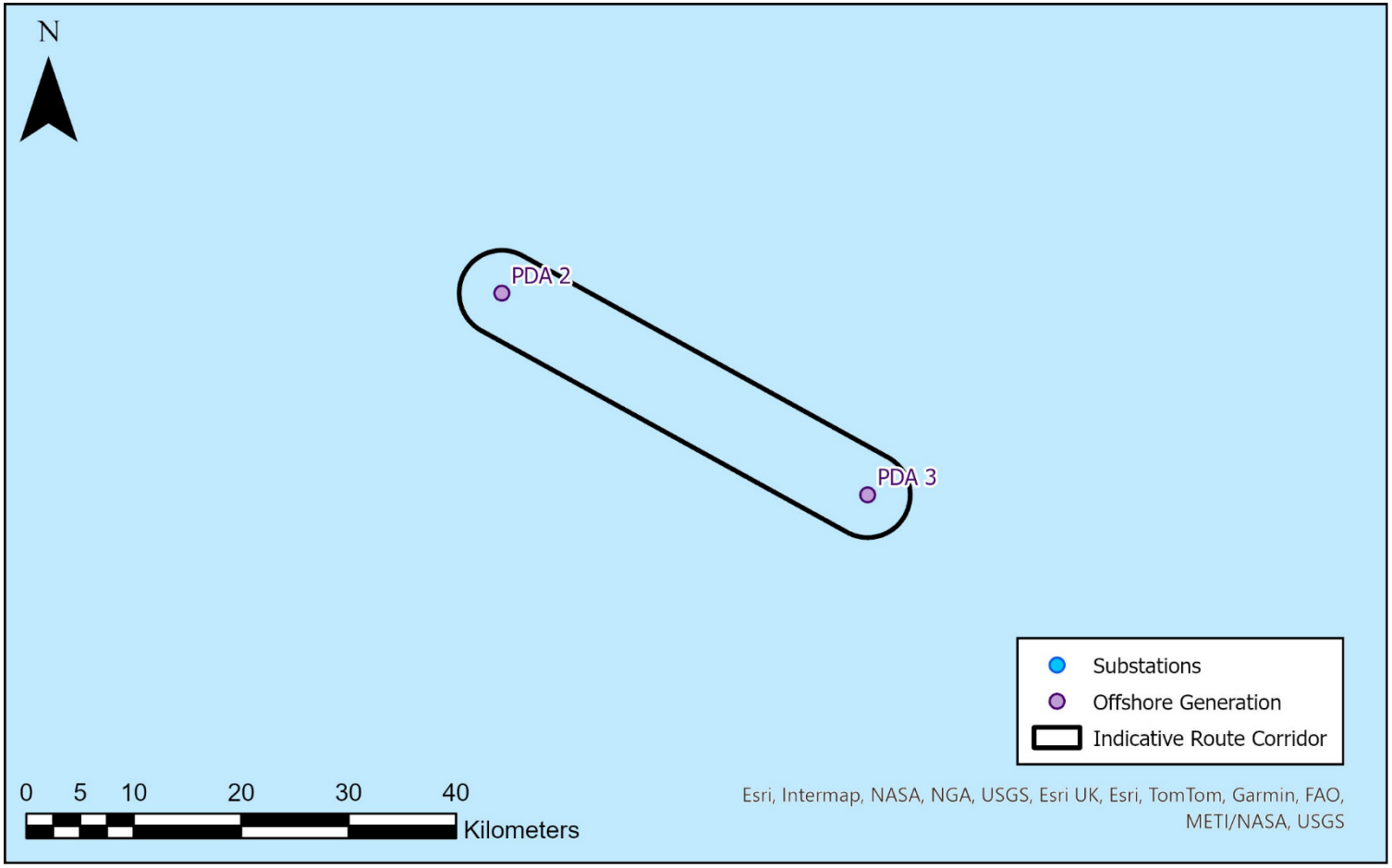
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Bristol Channel Approaches SAC (designated for harbour porpoise) is within the offshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species (-2). The Mermaid's Pool to Rowden Gut SSSI and Westward Ho! Cliffs SSSI are within the route corridor at landfall; these may be possible to avoid but the potential is limited owing to the small 80m gap between sites. There may be potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities (-2). The Bideford to Foreland Point MCZ (designated for a wide range of habitats including intertidal sand, subtidal sediment and rock) is within the offshore and landfall route corridor but can be avoided. The Culm Grasslands SAC (designated for Molinia meadows), Dunsdon Farm SSSI, Kingford Fen SSSI, Kismeldon Meadows SSSI, Mambury and Stowford Moors SSSI, Small Brook SSSI, Common Moor, and East Putford SSSI are also within the onshore route corridor but can be avoided. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore and landfall route corridor. The landfall areas cannot be avoided, and there is potential for direct and indirect impacts on this habitat during construction and decommissioning (-2); direct impacts have the potential to be long-term to permanent in nature in the footprint of infrastructure (-2). There are also known areas of ancient woodland within the landfall and onshore route corridor, however, these can be avoided, avoiding the potential for direct impacts. The North Devon Biosphere reserve is within the offshore, landfall and onshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Bideford is within the landfall and onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). The Westward Ho bathing	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
waters are located within the offshore and in the northern part of the landfall route corridors, but this area can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the bathing waters during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs offshore which can be avoided, avoiding the potential for direct impacts (-1). The offshore Westward Ho! Cliffs SSSI can be avoided, however, the remainder of the landfall is occupied by the Mermaids Pool and Rowden Gut SSSI. It should be noted there is a c.80m gap between these two designations (-2). There are also Annex 1 reefs at landfall that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of good quality with the ability to avoid the very good quality land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	*-2*	*-2*	*-2*	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as six offshore cables are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads and onshore infrastructure (National Grid overhead lines) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one diffuser) and the Bideford urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Parks and Gardens or Conservation Areas within the 5km indicative route corridor. There are seven known wreck locations within the offshore route corridor and two within the route corridor at landfall, which are all avoidable by the cable route within the corridor, avoiding the	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
potential for direct impacts. There is one Scheduled monument within the route corridor at landfall and 16 within the onshore route corridor. There are also 27 listed buildings within the route corridor at landfall and 125 within the onshore route corridor. However, these assets can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) The North Devon AONB is within the route corridor at landfall and onshore and cannot be avoided by the cable route. The Hartland Heritage Coast is within the route corridor offshore, at landfall and onshore and cannot be avoided. The South West Coastal Path is also within the route corridor at landfall and onshore and cannot be avoided. There is potential for short-term direct and indirect impacts on landscape and views within these sensitive areas during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the project stage (-2). The urban area of Bideford is within the landfall and onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect
Cumulative and in combination issues				
The route from PDA2 to North Devon makes landfall in the same location as X-links, and coordination will be required. The route is similar to the route PDA3 to North Devon and coordination will be required where these occur together.				

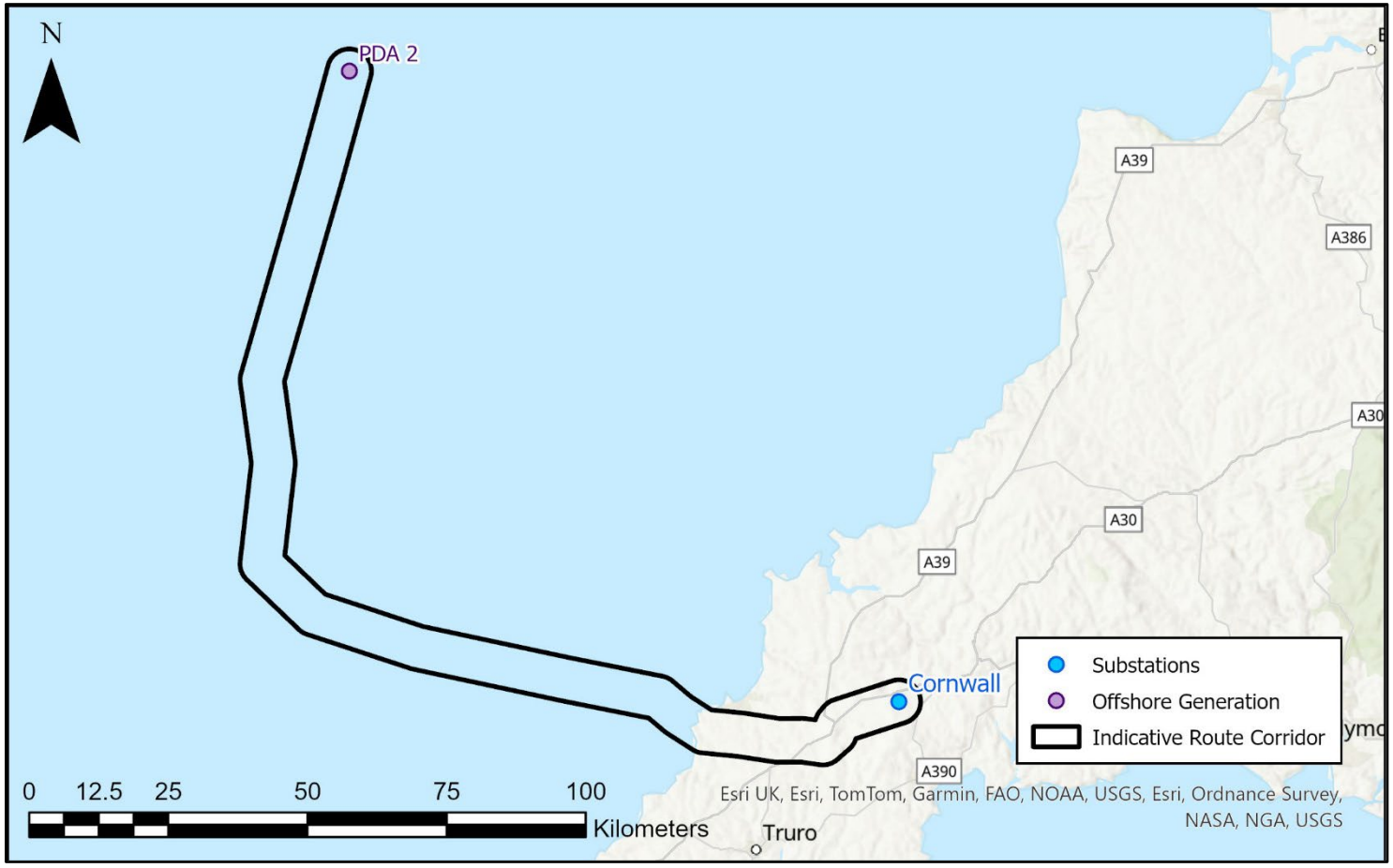
PDA2 – PDA3						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA2	PDA3	24	1000	2 AC	2	N - HNDFUE Celtic Sea
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as three offshore cables are located within the 5km indicative route corridor and cannot be avoided. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There is one known wreck location within the route corridor, which is located entirely offshore. This asset is avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect
Cumulative and in combination issues				
There are no cumulative or in combination constraints within the PDA1_PDA2 5km indicative route corridor.				

PDA2 - Cornwall						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
PDA2	Cornwall	137	1500	3 AC	3	N - HNDFUE Celtic Sea
Overview of Route						

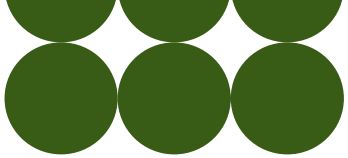


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Bristol Channel Approaches SAC (designated for harbour porpoise) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of harbour porpoise and damage to supporting habitats and displacement of prey species (-2). The Kelsey Head SSSI and Penhale Dunes SSSI are within the route corridor at landfall and onshore and each site cannot be avoided unless the cable route crosses the other. The Breney Common and Goss and Tregoss Moors SAC (designated for heaths and mires) is also within the onshore route corridor, with limited scope for avoidance, and the Mid Cornwall Moors SSSI is also within the onshore route corridor and cannot be avoided. There is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, such as damage to habitats (-2). There are also several designated sites within the route corridor that can be avoided, avoiding the potential for direct impacts. The Newquay and the Gannet MCZ (designated for a variety of habitats and species, including exposed sandy beaches and rocky shores, sediment, sand and mud communities, saltmarsh and giant goby) is within the offshore and landfall route corridor, the Penhale dunes SAC (designated for dune habitats) is within the route corridor at landfall and onshore, and the Newlyn Downs SAC (designated for heaths) and SSSI, River Camel SAC (designated for bullhead and otter), and River Camel Valley and the Tributaries SSSI are within the onshore route corridor. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore and landfall route corridor and known locations of Annex I sandbank within the offshore route corridor. The offshore areas of these habitats cannot be avoided, and there is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term or permanent in nature in the footprint of infrastructure (-2). There is also a small area of ancient woodland within the onshore route corridor, which can be avoided. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Population and Human Health (PHH) The urban area of Crantock is within the landfall and onshore route corridor, and the urban areas of Saint Newlyn East, Saint Enoder, Roche, Victoria and Saint Dennis are within the onshore route corridor. However, these can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There are two bathing water areas (Crantock, Holywell Bay) within the offshore and landfall route corridors, however these can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are onshore historic landfill sites which can be avoided, avoiding the potential for direct impacts (-1). However, there are Annex 1 reefs offshore and at landfall that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no identified areas of excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily of good, moderate and very poor quality with the ability to avoid the very good quality land (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, at landfall these could be avoided but in the onshore route corridor these cannot be avoided and would have to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; there is potential to avoid these at landfall, but these cannot be avoided within the route corridor, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct

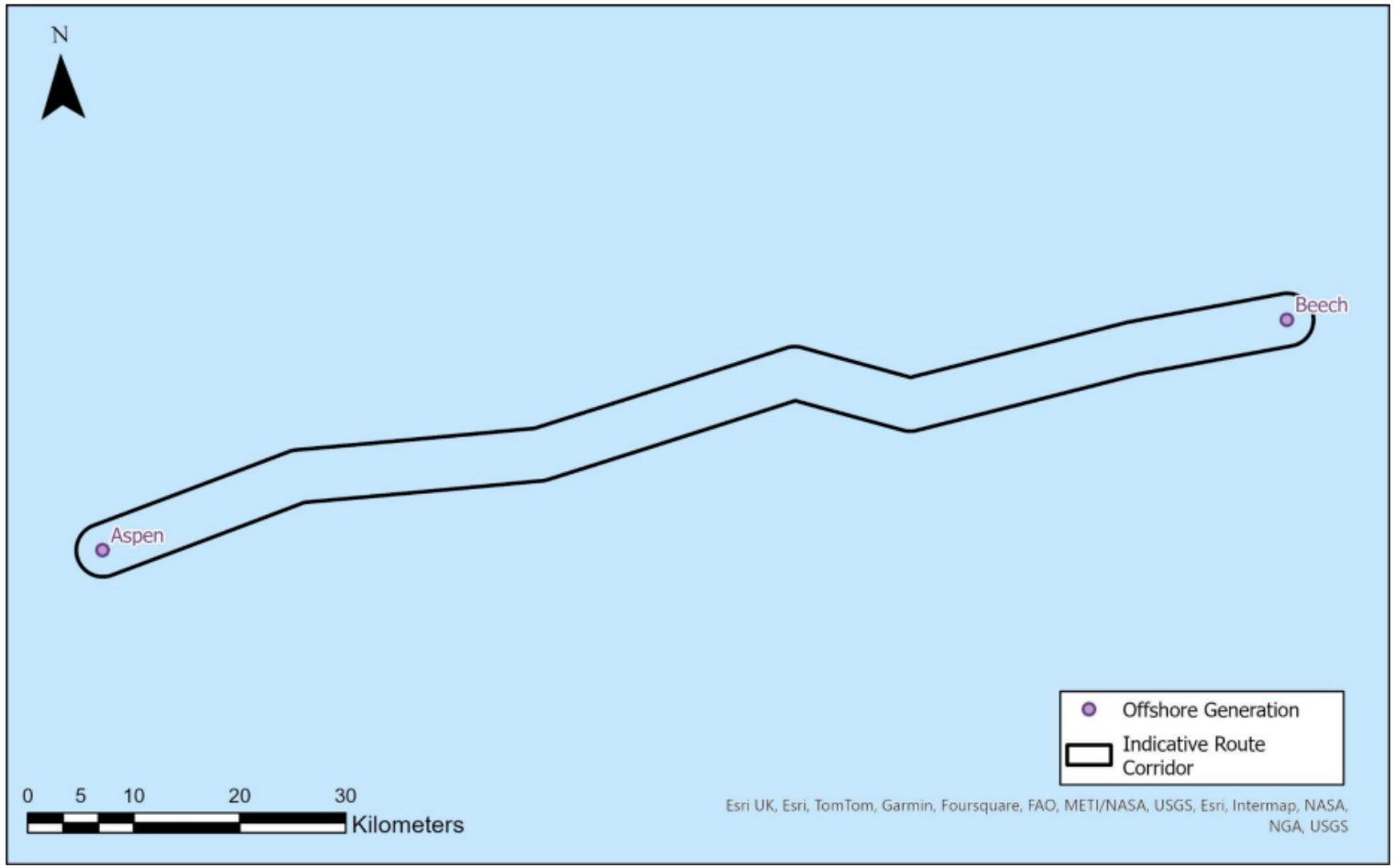
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as nine offshore cables, the Trevose Military Area and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads and onshore infrastructure (National Grid infrastructure) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There are high-density shipping areas, and six urban areas (Crantock, Saint Newlyn East, Saint Enoder, Roche, Victoria and Saint Dennis) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Parks and Gardens or Conservation Areas within the 5km indicative route corridor. There are 41 known wreck locations within the offshore route corridor and three within the route corridor at landfall, which are all avoidable by the cable route within the corridor, avoiding the potential for direct impacts. There are nine Scheduled monuments within the route corridor at landfall and 19 within the onshore route corridor. There are also 52 listed buildings within the route corridor at landfall and 194 within the onshore route corridor. However, these assets can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The South West Coastal Path is within the route corridor at landfall and onshore and cannot be avoided. There is potential for short-term direct and indirect impacts on landscape and views within this sensitive area during the construction and decommissioning phases and during cable maintenance activities, which will need to be considered at the project stage (-2). There are also three areas of National Trust land within the route corridor at landfall, Cubert and the Kelseys, The Gannel, and The Kelseys, which can all be avoided. There may be potential for short-term indirect impacts on landscape and views within these areas. The urban area of Crantock is within the landfall and onshore route corridor, and the urban areas of Saint Newlyn East, Saint Enoder, Roche, Victoria and Saint Dennis are within the onshore route corridor. However, these can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect
Cumulative and in combination issues				
There is potential for cumulative effects with the PDA3 to Cornwall corridor where both pass close to the southern boundary of the South-West Approaches to Bristol Channel MCZ.				



F.1.4 HNDFUE INTOG Routes

Aspen - Beech						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Aspen	Beech	115	500	2 AC	2	Y - HNDFUE INTOG
Overview of Route						

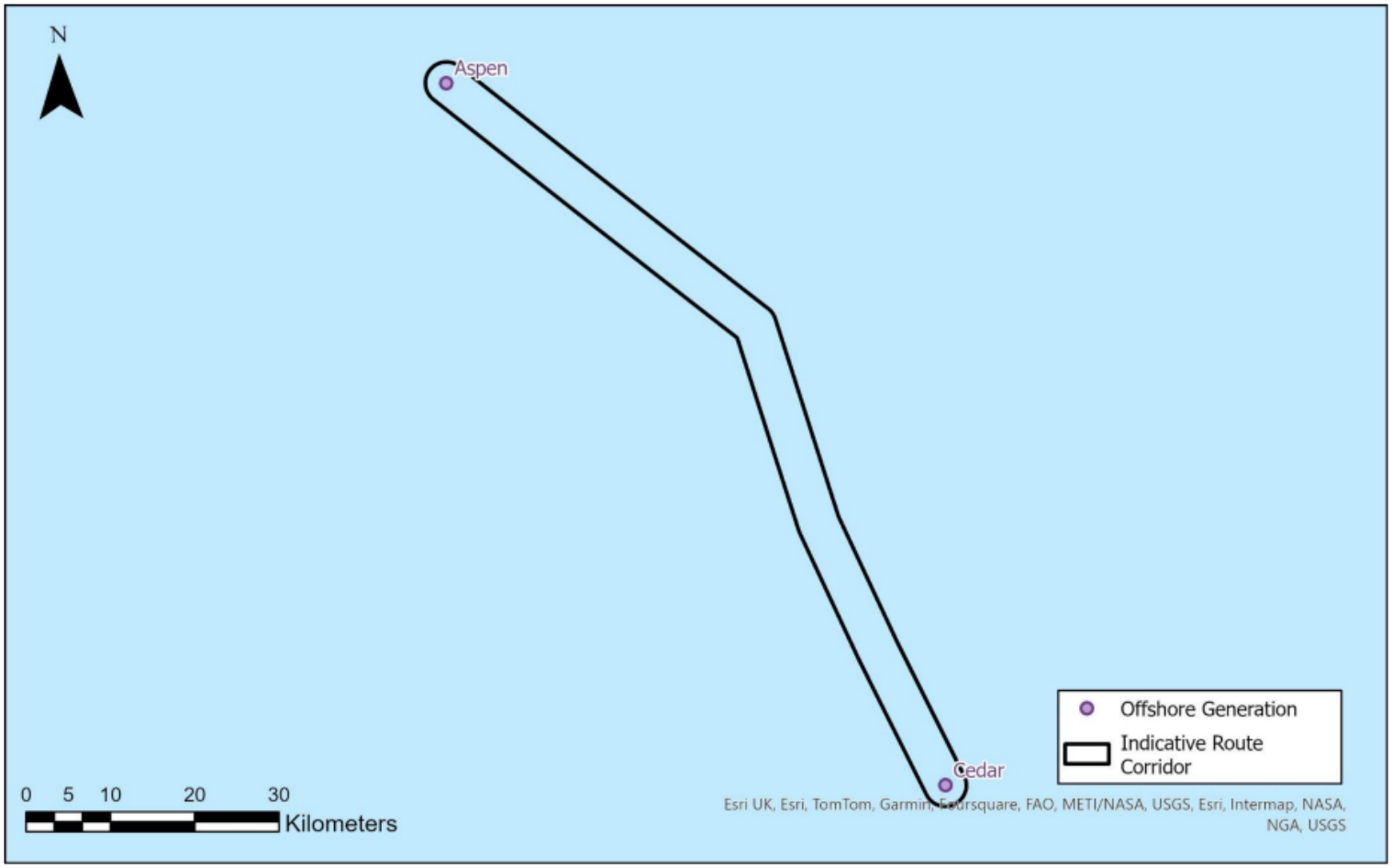


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as seven offshore pipelines and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (46 oil/gas wells) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are two known wreck locations within the route corridor, which is located entirely offshore. These assets are avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
The route from Aspen to Beech crosses the TOG route from North Connect to Cenos.				

Cedar - Aspen						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Cedar	Aspen	105	1000	2 AC	2	Y - HNDFUE INTOG
Overview of Route						

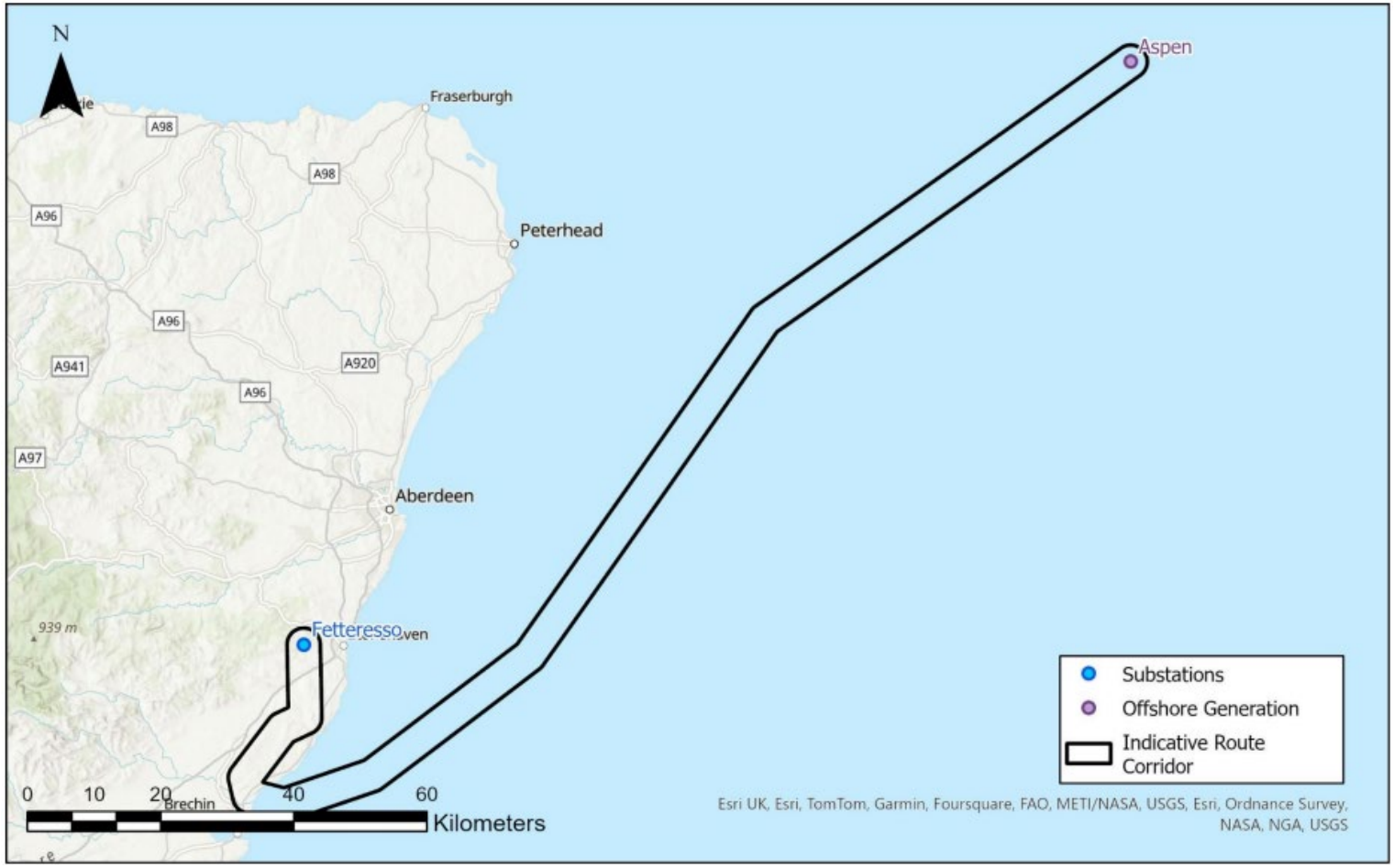


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one offshore cable, four offshore pipelines and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (59 oil/gas wells and three oil/gas installations) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are three known wreck locations within the route corridor, which is located entirely offshore. These assets are all avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
The route from Cedar to Aspen intersects the HNDFUE route from SW_E2a_2 to Richborough and the TOG routes Beech to Cedar and Cenos to Peterhead1.				

Aspen - Fetteresso						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Aspen	Fetteresso	204	1500	2 DC	1	Y - HNDFUE INTOG
Overview of Route						



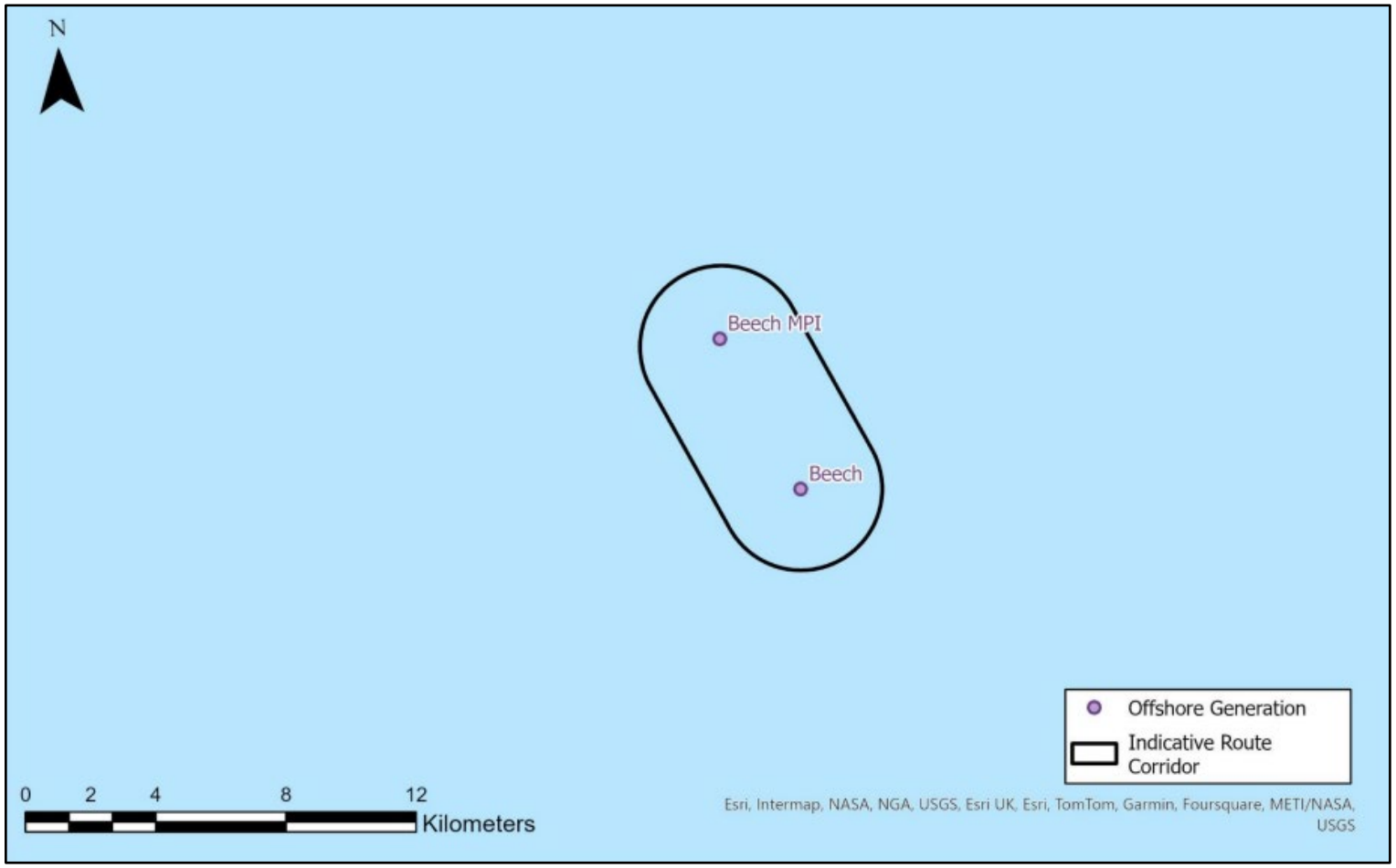
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The St Cyrus and Kinnaber Links SSSI (designated for birds, grassland, moths and saltmarsh) is within the offshore, landfall and onshore route corridor and the potential to avoid the site is limited. There may be potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats and displacement of species (-2). The West Bradieston and Craig of Garvock SSSI (designated for heathland, meadow and grassland habitats) is within the onshore route corridor but can be avoided; however, the potential for indirect impacts on site features will need to be considered at the project stage (-1). There are known locations of Annex I reef within the route corridor offshore and at landfall and known locations of Annex I saltmarsh at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity (-1). There are also known areas of ancient woodland within the route corridor at landfall and onshore, however these can be avoided (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban area of Saint Cyrus is within the route corridor at landfall and onshore and the urban area of Inverbervie is also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is an RYA boating area within the offshore and landfall route corridor, however this can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the boating area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs at landfall and offshore that can be avoided, avoiding the potential for direct impacts (-1). The Milton Ness SSSI present offshore and at landfall can be avoided, however, the remainder of the landfall is occupied by the St	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cyrus and Kinnaber Links SSSI (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good to moderate and poor quality that cannot be avoided (-1). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are Flood Zones within the onshore route corridor and at landfall; these cannot be avoided in the onshore route and there is limited scope to avoid these at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the landfall route corridor, however, these can be avoided (-1). There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
works (204.9 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one offshore cable, one offshore pipeline and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, three onshore gas pipelines (Aberdeen to Abroath, Aberdeen to Kirriemuir and St. Fergus to Lochside), a railway line and numerous roads are located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one oil/gas well), a military area and two urban areas (Saint Cyrus and Inverbervie) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs or Conservation Areas within the 5km indicative route corridor. There are 14 known wreck locations within the offshore route corridor. There are five Scheduled monuments within the route corridor at landfall and 13 Scheduled monuments and 43 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. The Arbuthnott House Park/Garden is within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban area of Saint Cyrus is within the route corridor at landfall and onshore and the urban area of Inverbervie is also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route from Aspen to Fetteresso partially shares a similar route to HND1 route SW_E1b to Fiddes) and HNDFUE route SW_E3 to Fiddes. The offshore route crosses the HND route SW_E1a to SW_NE7 and SW_E1b to Peterhead, HNDFUE route SW_E2b to Peterhead2/DCSS, SW_E3 to Fiddes, SW_E2a_1 to Fiddes, SW_E2a_2 to Fiddes and TOG route Cenos to Peterhead.				

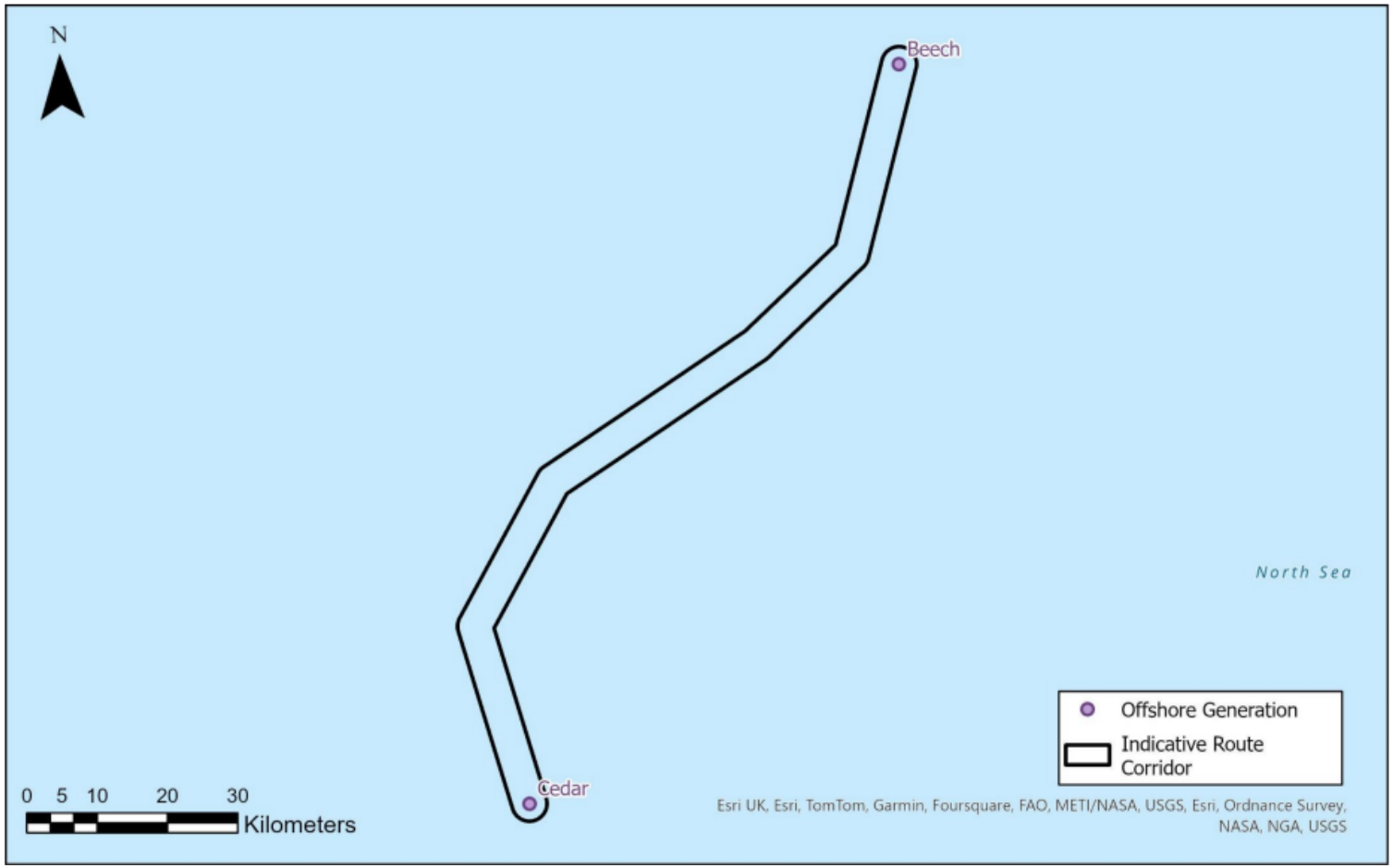
Beech - Beech MPI						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Beech	Beech MPI	5	2000	4 AC	4	Y – HNDFUE INTOG
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is offshore infrastructure (three oil/gas wells) located within the 5km indicative route corridor, which can be avoided, avoiding potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no known cultural heritage sensitivities within the route corridor, which is located entirely offshore. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect
Cumulative and in combination issues				
There are no cumulative or in combination constraints identified.				

Beech - Cedar						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Beech	Cedar	115	500	2 AC	2	Y - HNDFUE INTOG
Overview of Route						

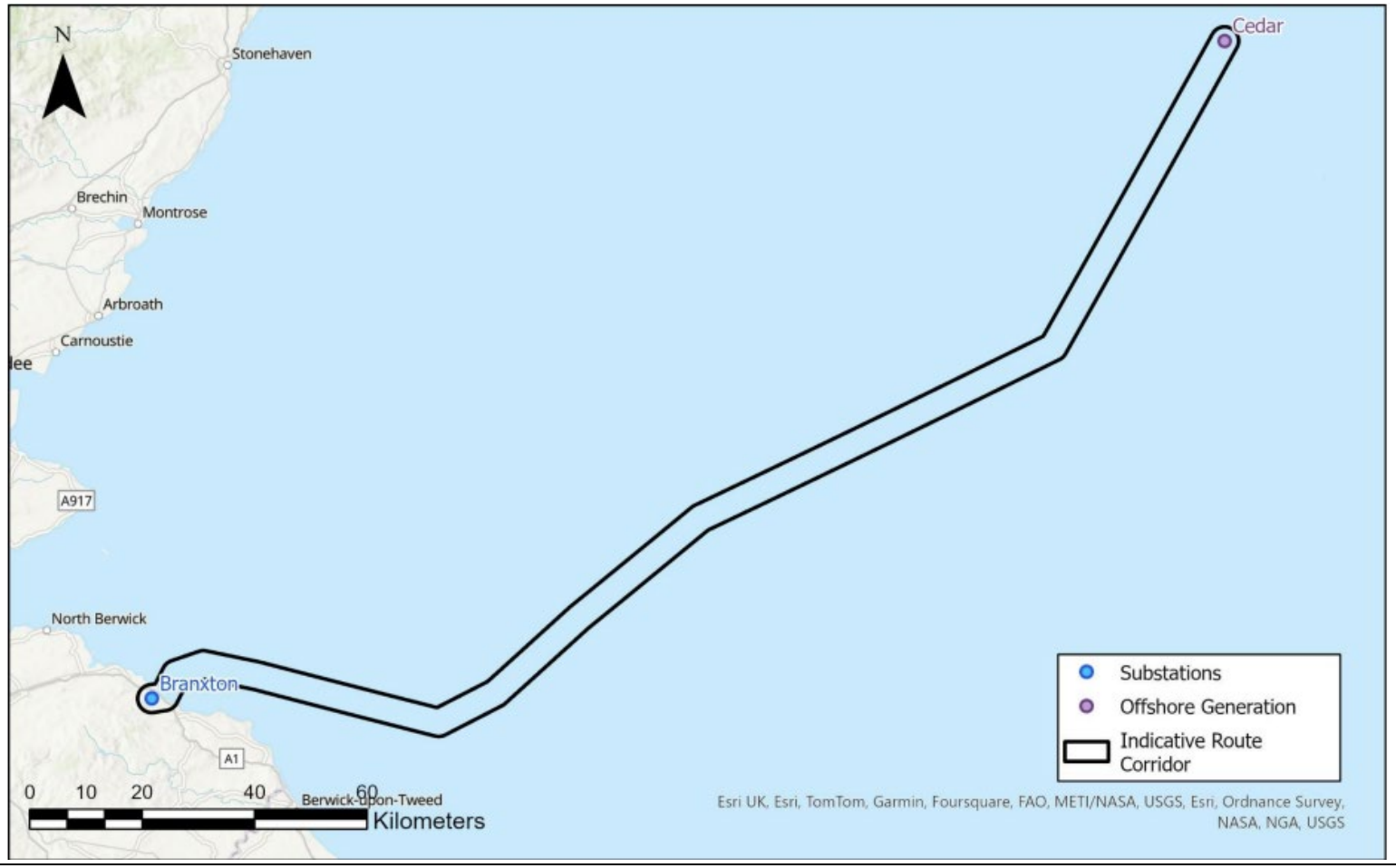


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as eight offshore pipelines, one offshore cable and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (39 oil/gas wells and three oil/gas installations) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are two known wreck locations within the route corridor, which is located entirely offshore. These assets are avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
The route from Beech to Cedar crosses the TOG routes Cedar to Aspen, Aspen to Beech, North Connect to Cenos and Cenos to Peterhead.				

Cedar - Branxton						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Cedar	Branxton	246	2000	2 DC Return	2	Y - HNDFUE INTOG
Overview of Route						



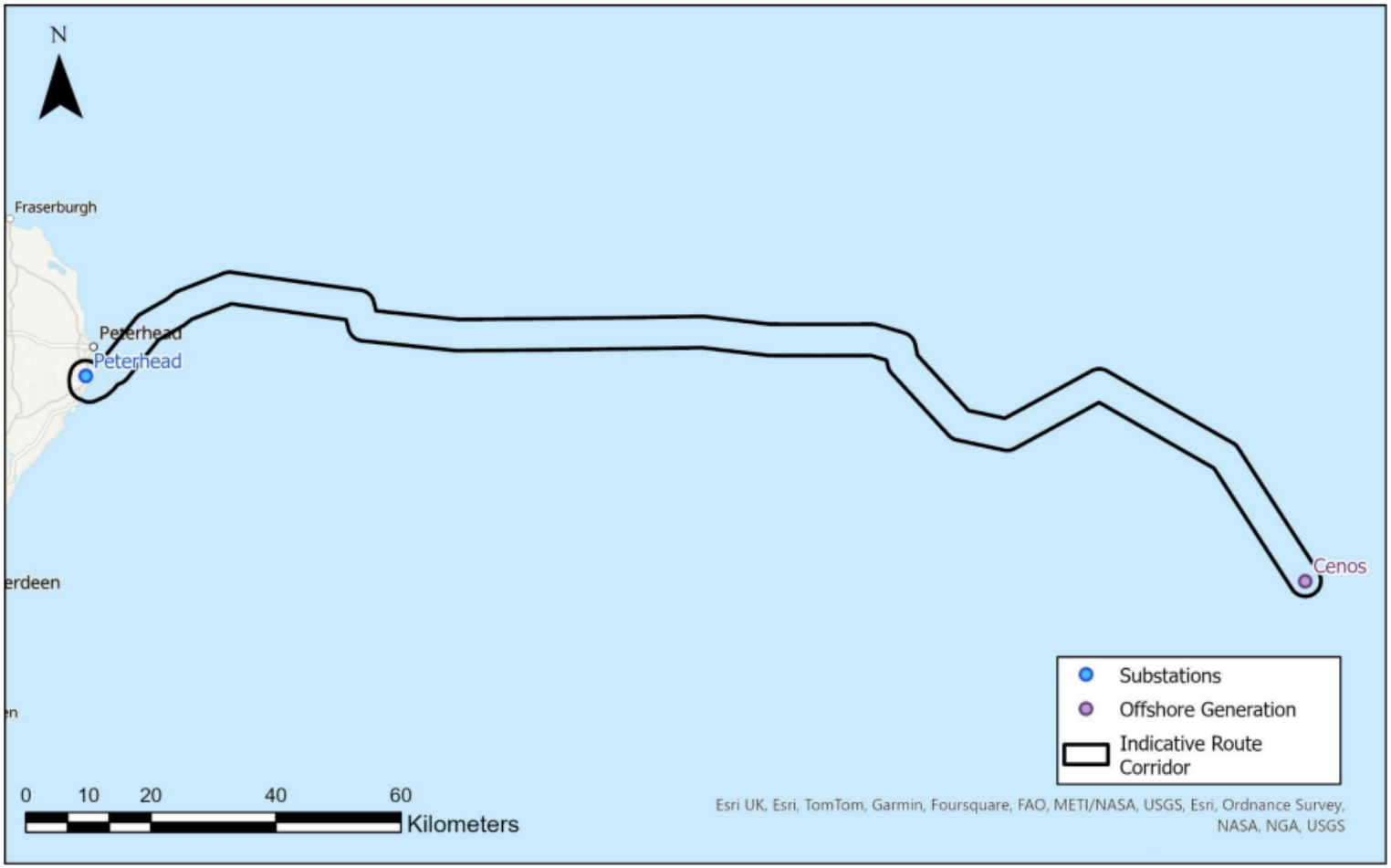
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species and damage to supporting habitat (-2). Potential impacts and mitigation will need to be considered at the detailed design stage. The Barns Ness Coast SSSI (designated for saltmarsh, sand dune and shingle habitats) is within the route corridor at landfall but can be avoided; the potential for indirect impacts on the protected features within this site in the short-term construction and decommissioning phases and during cable maintenance activities should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that cannot be avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. There are known locations of ancient woodland within the onshore route corridor, however these can be avoided by the cable route within the 5km indicative corridor. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) There are two bathing water sites located within the landfall route corridor, these can be avoided by the cable route within the corridor, avoiding the potential for significant direct impacts (-1). There is potential for indirect short-term, negative effects on the local population, such as noise and disturbance and water quality impacts to the bathing water site during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Barns Ness Coast SSSI and Pease Bay Coast SSSI present at landfall can be avoided, avoiding the potential for direct	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
impacts (-1). The Annex 1 reefs present cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily very good to good quality but there is potential to avoid the very good quality land (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but these can be avoided, avoiding the potential for direct impacts. There are rivers within the onshore route corridor, these cannot be avoided, therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor; these can be avoided, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (246.7 km route length) during the construction and decommissioning phases and during any cable maintenance activities.	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one offshore telecommunications cable and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are two Scottish Power overhead lines, railways and numerous roads located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (two oil/gas wells and one diffuser), the Neart na Gaoithe offshore wind farm cable, the proposed Eastern Link Off Torness Cable and onshore infrastructure (two Scottish Power Substations and two Scottish Power cables) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 21 known wreck locations within the offshore route corridor, however, these can be avoided by the cable route, avoiding the potential for direct negative impacts. There are 20 Scheduled monuments and 49 listed buildings within the onshore route corridor, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. The Dunglass Park and Garden is within the route corridor but can be avoided by the cable route within the corridor, avoiding the potential for direct impacts within this site. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity (L) There are no identified landscape and visual sensitivities (AONBs, National Parks, Heritage Coasts, National Trust lands, Heritage Trails, urban areas / settlements) within the 5km indicative route corridor. In general, there is potential for short-term impacts on local views during the construction and decommissioning phases (-1).	-1	0	0	Direct
Cumulative and in combination issues				
The route from Cedar to Branxton intersects the HND routes from SW_E1a (Morven) to LCN and Hawthorn Pit and PA_2 (Berwick Bank Extension) to Blyth. There is potential interaction with HND routes SW_E1a to Blyth, SW_E1a to R4_1 and SW_E1a to R4_2. There are HNDFUE crossings required including SW_E1c_2 (Ossian) to LCN, SW_E1c_1 (Ossian) to Weston Marsh and SW_E2a_2 (Campion) to Richborough. This route shares a similar approach to shore and onshore as the SW_E1a (Morven) to Branxton route from HNDFUE. There is potential interaction with all routes to England within HNDFUE.				

Cenos – Peterhead1						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Cenos	Peterhead1	227	1400	2 DC	1	Y - HNDFUE INTOG
Overview of Route						



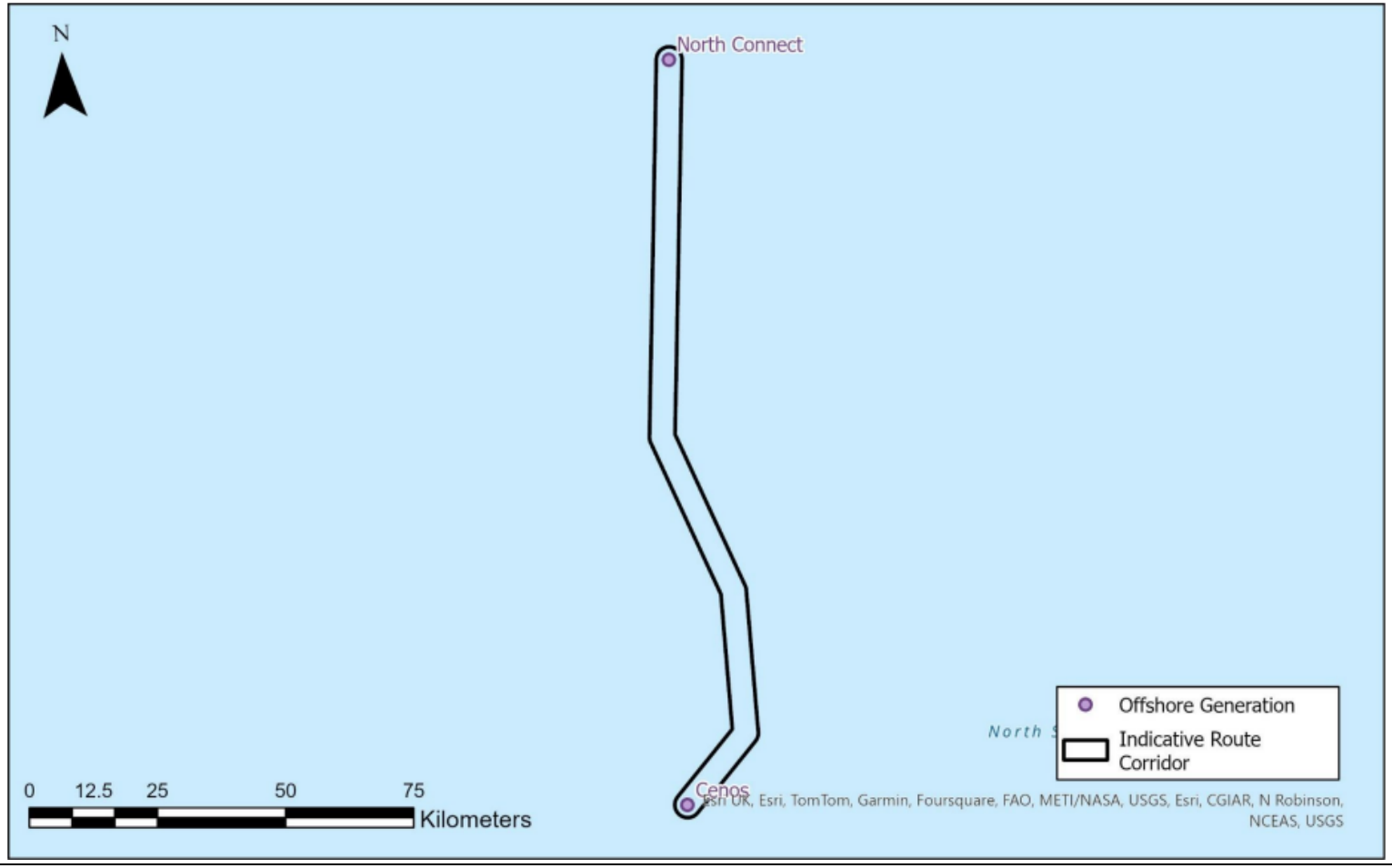
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Buchan Ness to Collieston SPA (designated for seabirds, including black-legged kittiwake, common guillemot, herring gull, European shag and northern fulmar) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species and damage to supporting habitats (-2). The East of Gannet and Montrose Fields MPA is within the offshore route corridor and cannot be avoided as the generation sites is located within the MPA. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to benthic habitats and species (-2). The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat. The Buchan Ness to Collieston Coast SAC (designated for vegetated cliff habitat) and the Bullers of Buchan Coast SSSI are within the route corridor at landfall and there is limited scope to avoid these sites. There is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats (-2). The Buchan Ness to Collieston Coast IBA is also within the route corridor at landfall and there is limited scope to avoid the site. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that cannot be completely avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term to permanent in nature in the footprint of infrastructure. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Population and Human Health (PHH) The urban area of Boddam is within the route corridor at landfall and onshore but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are offshore dredge and spoil dumping sites which can be avoided, avoiding the potential for direct impacts (-1). In addition, the dredge and spoil dumping sites at landfall can be avoided. However, the Southern Trench MPA and the Annex 1 reefs cannot be completely avoided (-2). At landfall, the Bullers of Buchan Coast SSSI can also not be avoided as there is a gap of less than 1km and the remainder of the landfall is occupied by the urban area of Boddam. There are also Annex 1 reefs at landfall that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, there is potential to avoid these rivers at landfall, but these cannot be avoided within the onshore corridor; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are Flood Zones within the onshore route corridor and at landfall; these can be avoided within the onshore corridor but cannot be avoided at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is one dredge and spoil dumping site at landfall, however there is potential to avoid this, avoiding the potential for direct impacts.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (222.7 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as three offshore cables, ten offshore pipelines, high-density shipping areas, the Buchan Deep Demo wind farm cable and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are numerous roads located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (34 oil/gas wells and four oil/gas installations), two dredge and spoil dumping sites, two proposed energy generation cables and the Boddam urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 15 known wreck locations within the offshore route corridor and three within the route corridor at landfall; however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument and 61 listed buildings within the route corridor at landfall and two Scheduled monuments and 60 listed buildings within the onshore route corridor. However, these assets can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban area of Boddam is within the route corridor at landfall and onshore but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route corridor from Cenos to Peterhead shares a landfall with the HND route SW_NE7 to Peterhead2/DCSS. The route corridor crosses HNDFUE routes SW_E2b to Peterhead2/DCSS, SW_NE7 to Peterhead2/DCSS and TOG routes Aspen to Fetteresso, Beech to Cedar and Cedar to Aspen.				

North Connect - Cenos						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
North Connect	Cenos	152	1400	2 DC	1	Y - HNDFUE INTOG
Overview of Route						

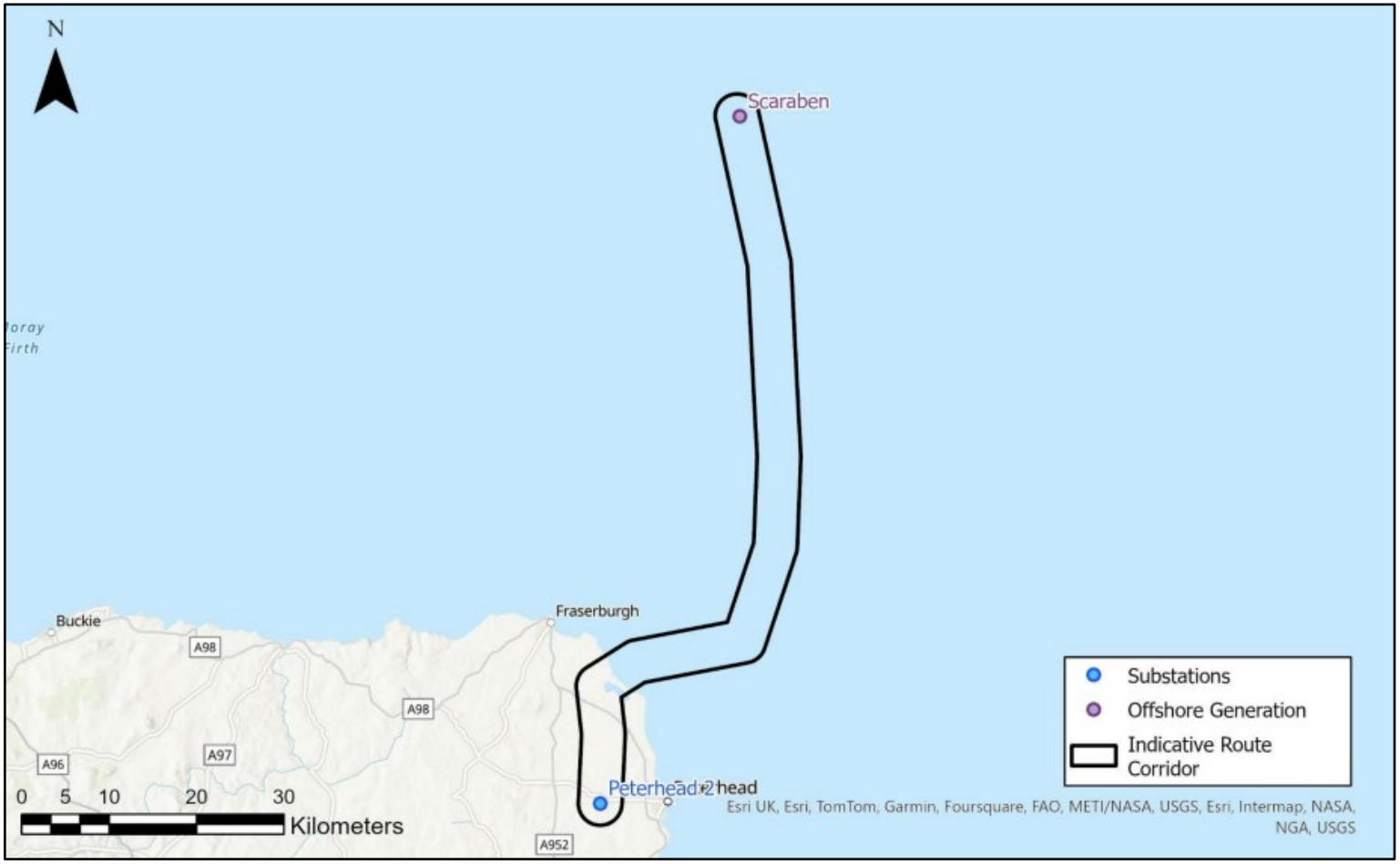


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The East of Gannet and Montrose Fields MPA is within the route corridor and cannot be avoided, as the generation site is withing this MPA. The site is dominated by sands and gravels, which are the preferred habitat of the ocean quahog (*Arctica islandica*). Many types of worms and mollusc live buried in the mud and provide an important food source for fish. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage and disturbance of habitats and benthic species (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as 1 offshore cable, 13 offshore pipelines and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (132 oil/gas wells and 19 oil/gas installations) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no known cultural heritage sensitivities within the route corridor, which is located entirely offshore. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L)	-1	0	0	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
The route from North Connect to Cenos crosses the TOG routes Aspen to Beech, Beech to Cedar and Intersects the route Beech to Cenos.				

Scaraben – Peterhead2/DCSS						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Scaraben	Peterhead2/DCSS	92	200	1 AC	1	Y - HNDFUE INTOG
Overview of Route						



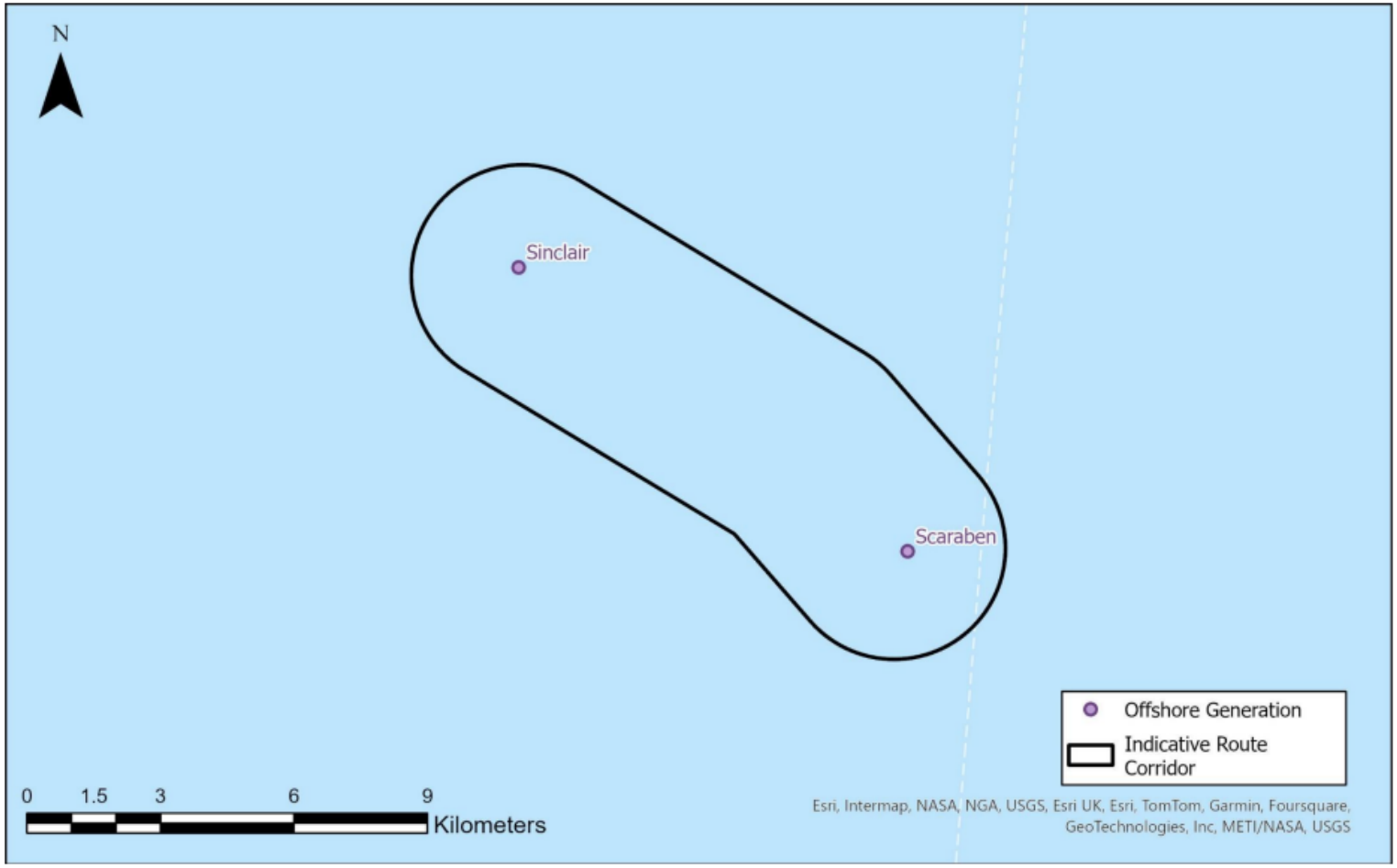
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat. The Loch of Strathbeg SPA (designated for goldeneye, whooper swan, greylag goose, pink-footed goose, Svalbard barnacle goose, teal, and sandwich tern, non-breeding waterfowl assemblage) and Ramsar site (designated for nutrient-rich dune slack pool, sandwich tern, teal, goldeneye, pink-footed goose, greylag goose, whooper swan, and Svalbard barnacle goose) are within the 5km indicative route corridor at landfall and onshore. These sites can be avoided by the cable route, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities (-1). The Loch of Strathbeg SSSI (designated for a breeding bird assemblage, non-breeding populations of goldeneye, greylag goose, pink-footed goose and whooper swan, eutrophic waterbody, sand dunes, salt marsh, fen meadow and open water transition fen) cannot be avoided within the route corridor at landfall and onshore, and there is potential for short-term direct and indirect impacts on protected birds and habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Rora Moss SSSI is within the onshore route corridor but can be avoided; the potential for indirect impact on designated features of this site should be considered at the detailed design stage (-1). The Loch of Strathbeg RSPB site and IBA are within the route corridor at landfall and onshore; the RSPB site cannot be avoided at landfall, and there is potential for short-term direct and direct impacts on birds and supporting habitats during the construction and decommissioning phases and during cable maintenance activities (-1). There are known locations of Annex I reef within the offshore route corridor and at landfall and known locations of Annex I saltmarsh within the route corridor at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity and impact pathways (-1). There are areas of ancient woodland within the onshore route corridor, however these can be avoided by the cable route.	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban area of Longside is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Annex 1 reefs and Cairnbulg to St Combs Coast SSSI can be avoided, avoiding the potential for direct impacts (-1). The Southern Trench MPA cannot be avoided within the route corridor. However, the route corridor does avoid the trench itself. In addition, The Loch of Strathbeg SSSI cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good to poor quality and there is potential to avoid the very good quality land (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	*-2*	*0*	*0*	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, there is potential to avoid these rivers at landfall, but these cannot be avoided and would have to be crossed within the onshore route corridor; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore there	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the landfall route corridor, however these can be avoided (-1). There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are five onshore gas pipelines which connect to the St. Fergus Gas Terminal and numerous roads located within the onshore portion of the 5km indicative route corridor. There is offshore infrastructure (six oil/gas wells and one pipeline) and the Longside urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 12 known wreck locations within the offshore route corridor, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There are 3 Scheduled monuments and 54 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. There are two Parks and Gardens within the onshore route corridor, Cairness and Crimonmogate. These sites can be avoided by cable routes within the corridor, avoiding the potential for direct impacts on these sites. There may be potential for short-term impacts on the setting of these heritage assets during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The Formartine and Buchan Way National Trail is within the onshore route corridor and cannot be avoided by the cable route, and there is potential for short-term direct visual impacts within this area during the construction and decommissioning phases, and during cable maintenance activities (-2). The urban area of Longside is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect
Cumulative and in combination issues				
The route corridor from Scaraben to Peterhead2/DCSS intersects the HNDFUE route SW_NE3 to New Deer 2 and shares a similar route corridor and landfall to HNDFUE routes SW_NE6 to Peterhead2/DCSS and SW_NE8 to Peterhead1. The route shares a similar corridor to the Innovation route Sinclair to Peterhead.				

Scaraben - Sinclair						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Scaraben	Sinclair	10	100	1 AC	1	Y – HNDFUE INTOG
Overview of Route						

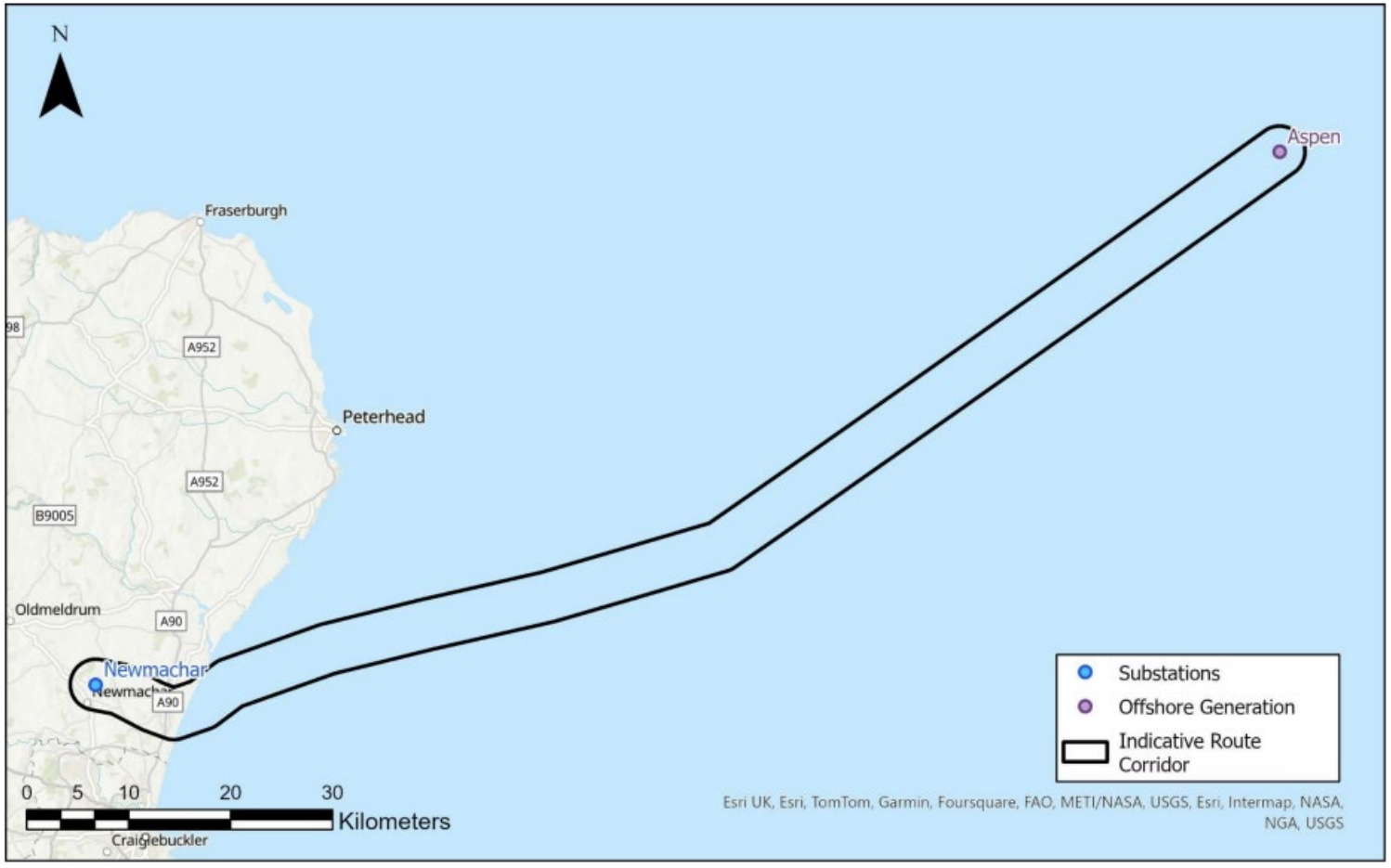


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	0	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (three oil/gas wells) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are two known wreck locations within the route corridor, which is located entirely offshore. These assets are avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cumulative and in combination issues				
There are no cumulative or in-combination constraints.				

Aspen - Aberdeenshire						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Aspen	Aberdeenshire (Newmachar)	131	2000	2 DC Return	2	N - HNDFUE INTOG
Overview of Route						



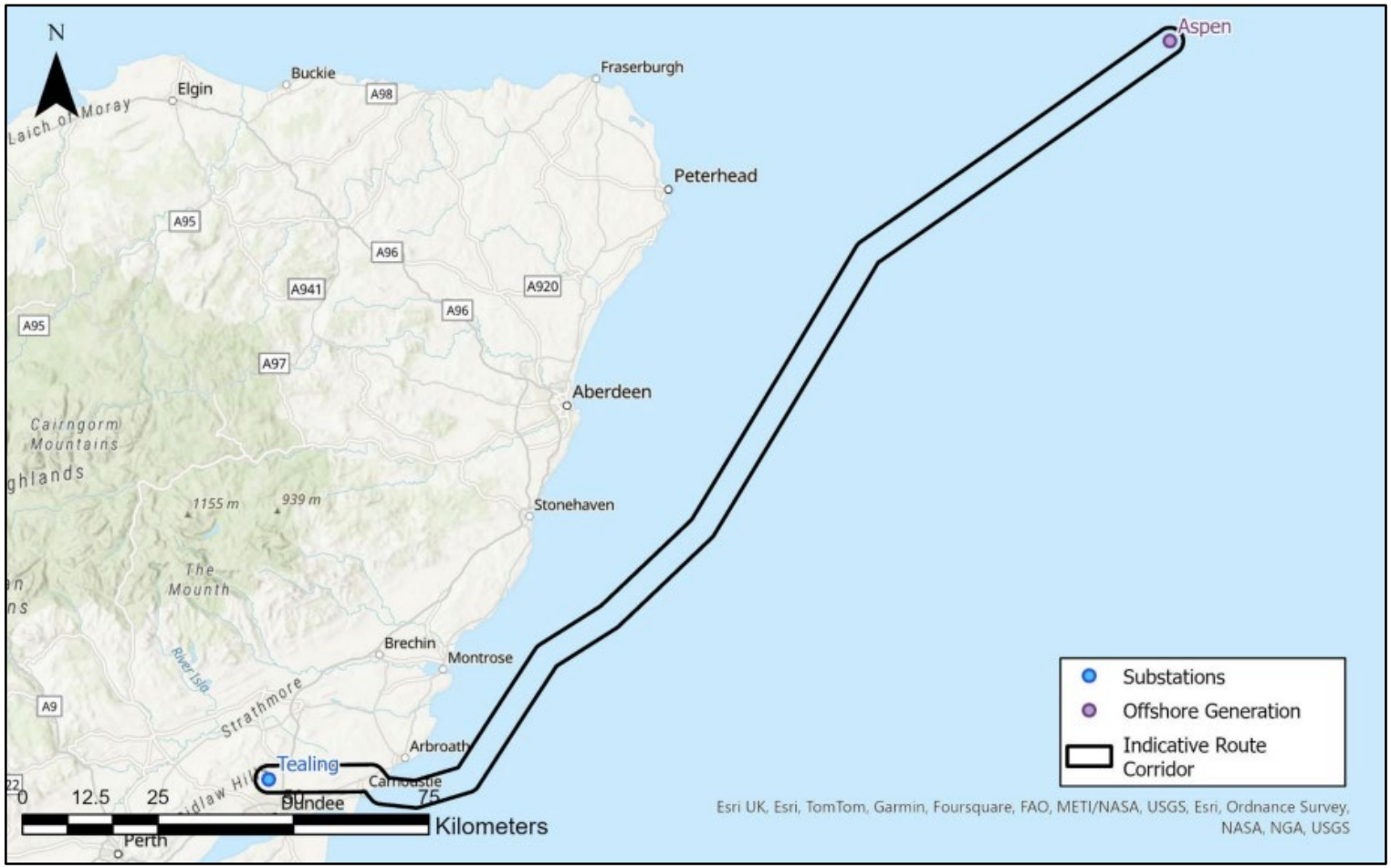
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Ythan Estuary, Sands of Forvie and Meikle Loch SPA (designated for breeding tern species and non-breeding redshank, pink-footed goose and waterfowl) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species or damage to supporting habitats (-2). The Foveran Links SSSI (designated for dune habitats) is within the landfall route corridor but can be avoided; however, the potential for indirect impacts on site features will need to be considered at the project stage (-1). There are also known areas of ancient woodland within the route corridor at landfall and onshore, however these can be avoided (-1). There is a grey seal population within the route corridor offshore and at landfall, which is unavoidable offshore; there is potential for short-term impacts such as disturbance and displacement of seals during the construction and decommissioning phases and during cable maintenance activities (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban area of Balmedie is within the route corridor at landfall and onshore and the urban areas of Newmachar and Kingseat are also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). The Balmedie bathing water site is within the offshore and landfall route corridor, and these can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the bathing waters during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The onshore Balmedie Quarry SSSI and the Foveran Links SSSI at landfall can be avoided, avoiding the potential for direct	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
impacts (-1). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good to moderate quality (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, there is potential to avoid these rivers at landfall, but these cannot be avoided within the onshore corridor and would need to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; there is potential to avoid these within the onshore corridor, but these cannot be completely avoided at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two offshore cables, two pipelines, high-density shipping areas and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one oil/gas well), the proposed Eastern Link 2 cable, the Drum Links Military Area, the Aberdeen offshore wind farm, and three urban areas (Newmachar, Balmedie and Kingseat) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Conservation Areas or Parks and Gardens within the 5km indicative route corridor. There are ten known wreck locations within the offshore route corridor and one at landfall. There is also one Scheduled monument and 17 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity (L) The Formartine and Buchan Way National Trail is unavoidable within the onshore route corridor and there is potential for short-term direct impacts on landscape and views within this area during the construction and decommissioning phases and during cable maintenance activities (-2). The urban area of Balmedie is within the route corridor at landfall and onshore and the urban areas of Newmachar and Kingseat are also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect
Cumulative and in combination issues				
The route from Aspen to Newmachar intersects the TOG route North Connect to Peterhead2/DCSS and Cedar to Fetteresso. Offshore the route may interact with HND route SW_NE7 to SW_E1a, SWE1b to Peterhead and HNDFUE route SW_E2b to Peterhead.				

Aspen – Emmock						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Aspen	Emmock	230	1500	2 DC	1	N - HNDFUE INTOG
Overview of Route						



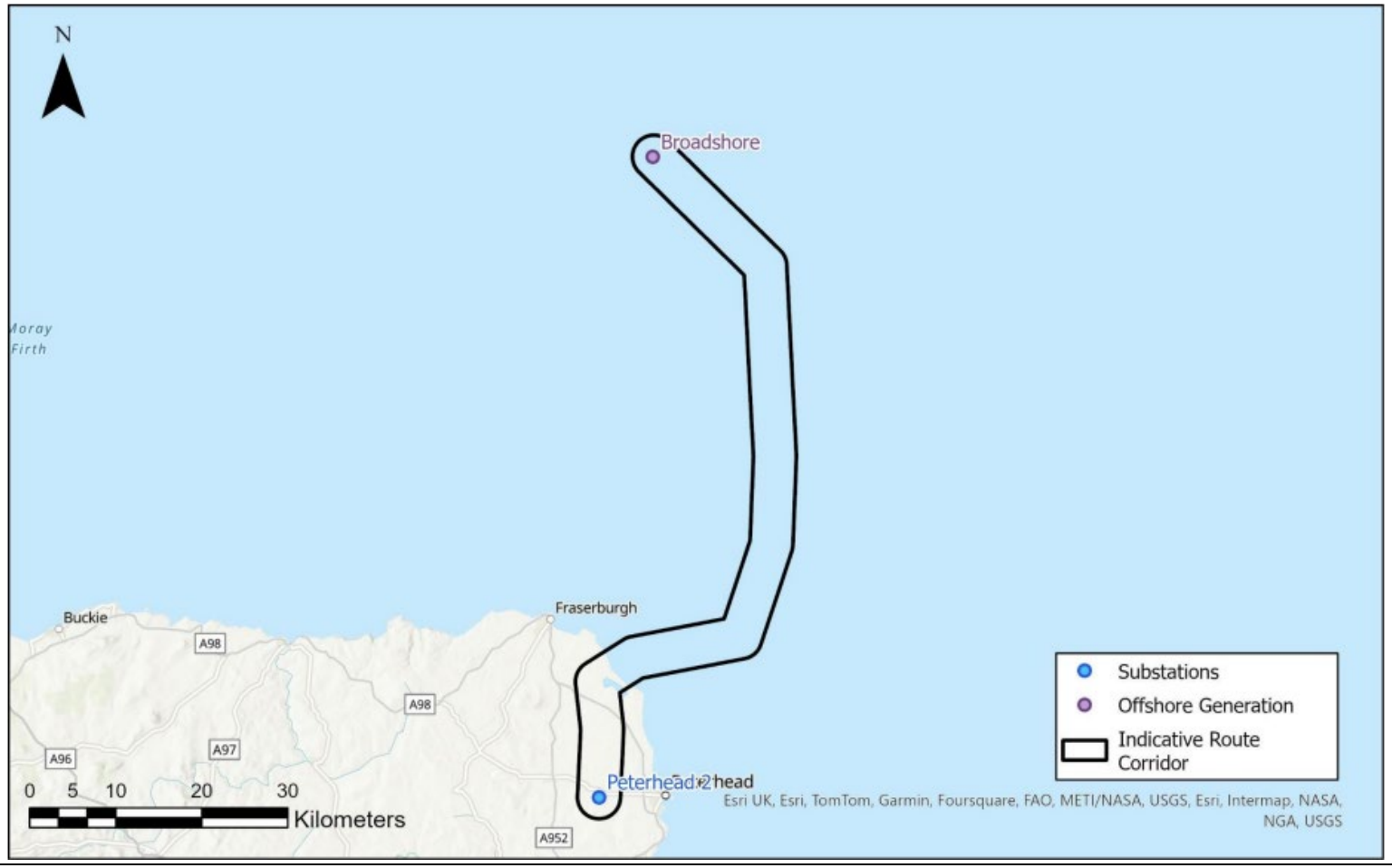
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) is within the offshore route corridor and the route corridor at landfall and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species and damage to supporting habitat (-2). Potential impacts and mitigation will need to be considered at the detailed design stage. The Easthaven SSSI (designated for meadow flora) is within the route corridor at landfall and the Gagie Marsh SSSI (designated for wetland plants) is within the onshore route corridor but can be avoided; however, the potential for indirect impacts on site features will need to be considered at the project stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that cannot be avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term to permanent in nature in the footprint of infrastructure. There are known locations of ancient woodland within the onshore route corridor, however these can be avoided by the cable route within the 5km indicative corridor. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect
Population and Human Health (PHH) The urban area of Camoustie is within the route corridor at landfall and onshore but can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is also an unavoidable RYA boating area within the offshore route corridor. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the boating area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are offshore dredge and spoil dumping sites and an onshore SSSI called the Whitehouse Den that can be avoided,	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
avoiding the potential for direct impacts (-1). There are Annex 1 reefs offshore and at landfall that cannot be avoided within the route corridor (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are identified areas of excellent quality agricultural land within the onshore route corridor, however, with a 1km gap there is potential to avoid it (-1). The remaining agricultural lands are primarily very good and good quality which cannot be avoided (-2). There is potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided and would have to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided at landfall but cannot be avoided within the onshore corridor, therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is one dredge and spoil dumping site offshore, however, there is potential to avoid this within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on CF within the route corridor. There is a known location of an Air Quality Management Areas (AQMA) within the onshore route corridor (Dundee AQMA), however this can be avoided (-1). There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
vicinity of the works (230 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one offshore cable, one offshore pipeline, one offshore energy generation cable (Seagreen offshore wind farm) and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, a railway line and onshore infrastructure (a gas pipeline) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one diffuser and one oil/gas well), one dredge and spoil dumping site, the Barry Duddon Military Area and the Carnoustie urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Conservation Areas or Parks and Gardens within the 5km indicative route corridor. There are 17 known wreck locations within the offshore route corridor and two within the route corridor at landfall. There are three Scheduled monuments within the route corridor at landfall and 26 Scheduled monuments and 113 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban area of Camoustie is within the route corridor at landfall and onshore but can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route from Aspen to Tealing crosses the HND route SW_E1a to Fiddes and HNDFUE route SW_E3 to Fiddes. As well as HND SW_E1b to Peterhead and HNDFUE roues SW_E2a_1 to Fiddes and SW_E2a_2 to Fiddes. Offshore, the route crosses the TOG route Cenos to Fetteresso.				

Broadshore – Peterhead2/DCSS						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Broadshore	Peterhead2/DCSS	88	1500	2 DC	1	N - HNDFUE INTOG
Overview of Route						



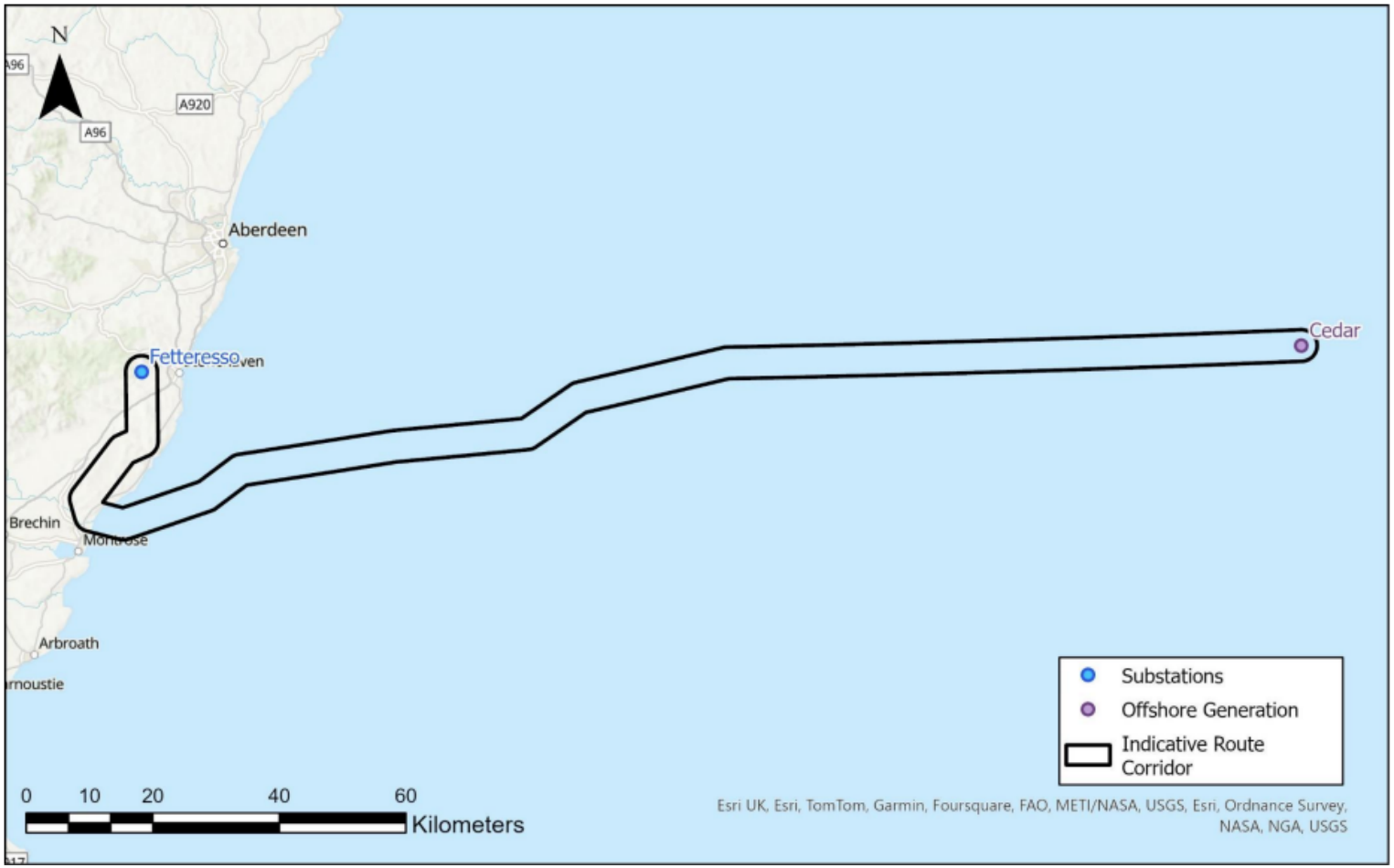
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat. The Loch of Strathbeg SSSI (designated for a breeding bird assemblage, non-breeding populations of goldeneye, greylag goose, pink-footed goose and whooper swan, eutrophic waterbody, sand dunes, salt marsh, fen meadow and open water transition fen) cannot be avoided within the route corridor at landfall and onshore, and there is potential for short-term direct and indirect impacts on protected birds and habitats during the construction and decommissioning phases and during cable maintenance activities (-2). The Loch of Strathbeg SPA (designated for goldeneye, whooper swan, greylag goose, pink-footed goose, Svalbard barnacle goose, teal, and sandwich tern, non-breeding waterfowl assemblage) and Ramsar site (designated for nutrient-rich dune slack pool, sandwich tern, teal, goldeneye, pink-footed goose, greylag goose, whooper swan, and Svalbard barnacle goose) are within the route corridor at landfall and onshore. These sites can be avoided by the cable route, avoiding the potential for direct impacts. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities (-1). The Rora Moss SSSI is within the onshore route corridor but can be avoided; the potential for indirect impact on designated features of this site should be considered at the detailed design stage (-1). The Loch of Strathbeg RSPB site and IBA are within the route corridor at landfall and onshore; the RSPB site cannot be avoided, and there is potential for short-term direct and indirect impacts on birds and supporting habitats during the construction and decommissioning phases and during cable maintenance activities (-1). There are known locations of Annex I reef within the offshore route corridor and at landfall and known locations of Annex I saltmarsh within the route corridor at landfall, however, these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity and impact pathways (-1). There are areas of ancient woodland within the onshore route corridor, however, these can be avoided by the cable route.	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).				
Population and Human Health (PHH) The urban area of Longside is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Annex 1 reefs and the Cairnbulg to St Combs Coast SSSI can be avoided, avoiding the potential for direct impacts (-1). The Southern Trench MPA cannot be avoided within the route corridor. However, the route corridor does avoid the trench itself (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good to moderate quality (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these will either need to be avoided or crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these cannot be avoided, therefore, there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the landfall route corridor, however, these can be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads and onshore infrastructure (five pipelines) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (seven oil/gas wells and one offshore pipeline) and the Longside urban area located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 11 known wreck locations within the offshore route corridor, however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There are 3 Scheduled monuments and 54 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. There are two Parks and Gardens within the onshore route corridor, Cairness and Crimonmogate. These sites can be avoided by cable routes within the corridor, avoiding the potential for direct impacts on these sites. There may be potential for short-term impacts on the setting of these heritage assets during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The Formartine and Buchan Way National Trail is within the onshore route corridor and cannot be avoided by the cable route, and there is potential for short-term direct visual impacts within this area during the construction and decommissioning phases, and during cable maintenance activities (-2). The urban area of Longside is within the onshore route corridor, but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-2	0	0	Direct & Indirect
Cumulative and in combination issues				
The route corridor from Broadshore to Peterhead2/DCSS intersects the HNDFUE route SW_NE3 to New Deer 2 and shares a similar route corridor and landfall to HNDFUE routes SW_NE6 to Peterhead2/DCSS and SW_NE8 to Peterhead.				

Cedar - Fetteresso						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Cedar	Fetteresso	223	1500	2 DC	1	N - HNDFUE INTOG
Overview of Route						



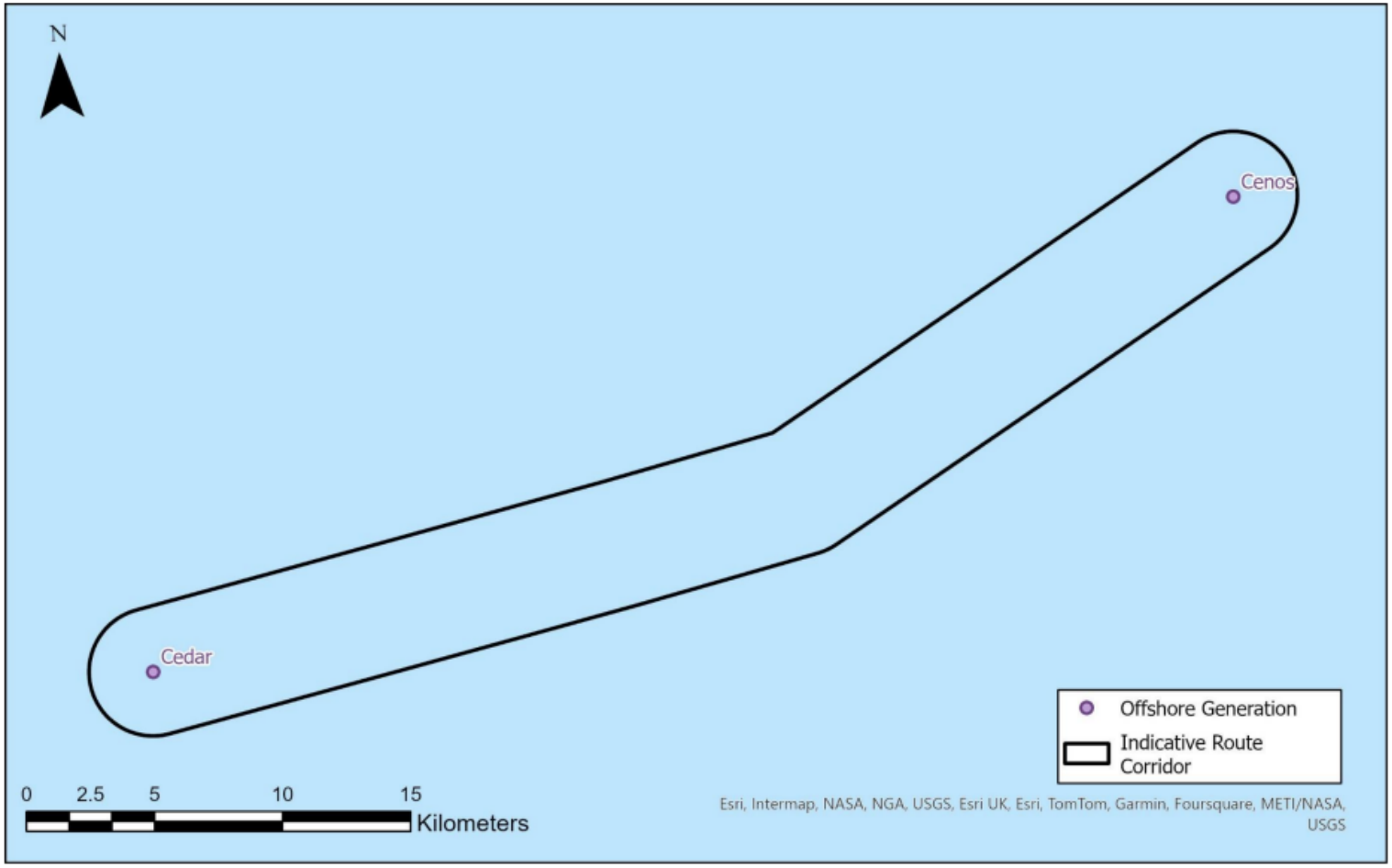
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Cyrus and Kinnaber Links SSSI (designated for birds, grassland, moths and saltmarsh) is within the landfall route corridor and the potential to avoid the site is limited as the remainder of the landfall is occupied by the Milton Ness geological SSSI. There may be potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats and displacement of species (-2). The West Bradieston and Craig of Garvock SSSI (designated for heathland, meadow and grassland habitats) is within the onshore route corridor but can be avoided; however, the potential for indirect impacts on site features will need to be considered at the project stage (-1). There are known locations of Annex I reef within the route corridor, offshore and at landfall and known locations of Annex I saltmarsh at landfall, however these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity (-1). There are also known areas of ancient woodland within the route corridor at landfall and onshore, however these can be avoided (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban area of Saint Cyrus is within the route corridor at landfall and onshore and the urban area of Inverbervie is also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is also an RYA boating area within the offshore and landfall route corridor which can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the boating area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs offshore and at landfall which can be avoided, avoiding the potential for direct impacts (-1). The Milton Ness SSSI and the St Cyrus and Kinnaber Links SSSI at landfall cannot be avoided (-2). There is potential for	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good to moderate quality, and the very good quality land can be avoided (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided and would have to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; there is potential to avoid these within the onshore corridor, but these cannot be completely avoided at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the landfall route corridor, however these can be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
works (223.5 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one offshore cable and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, a railway line and onshore infrastructure (three gas pipelines) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (six oil/gas wells), one military area and two urban areas (Saint Cyrus and Inverbervie) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs or Conservation Areas within the 5km indicative route corridor. There are 14 known wreck locations within the offshore route corridor. There are five Scheduled monuments within the route corridor at landfall and 13 Scheduled monuments and 43 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. The Arbuthnott House Park/Garden is within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban area of Saint Cyrus is within the route corridor at landfall and onshore and the urban area of Inverbervie is also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route from Cedar to Fetteresso partially shares a similar route to HND1 route SW_E1a to Fiddes and HNDFUE route SW_E3 to Fiddes. Offshore, the route crosses the HNDFUE route SW_E2a_2 to SW_E1c_1. As well as HND SW_E1b to Peterhead and HNDFUE roues SW_E2a_1 to Fiddes, SW_E2a_2 to Fiddes and SW_E2a_2 to EACN.				

Cedar - Cenos						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Cedar	Cenos	46	1000	2 AC	2	N - HNDFUE INTOG
Overview of Route						

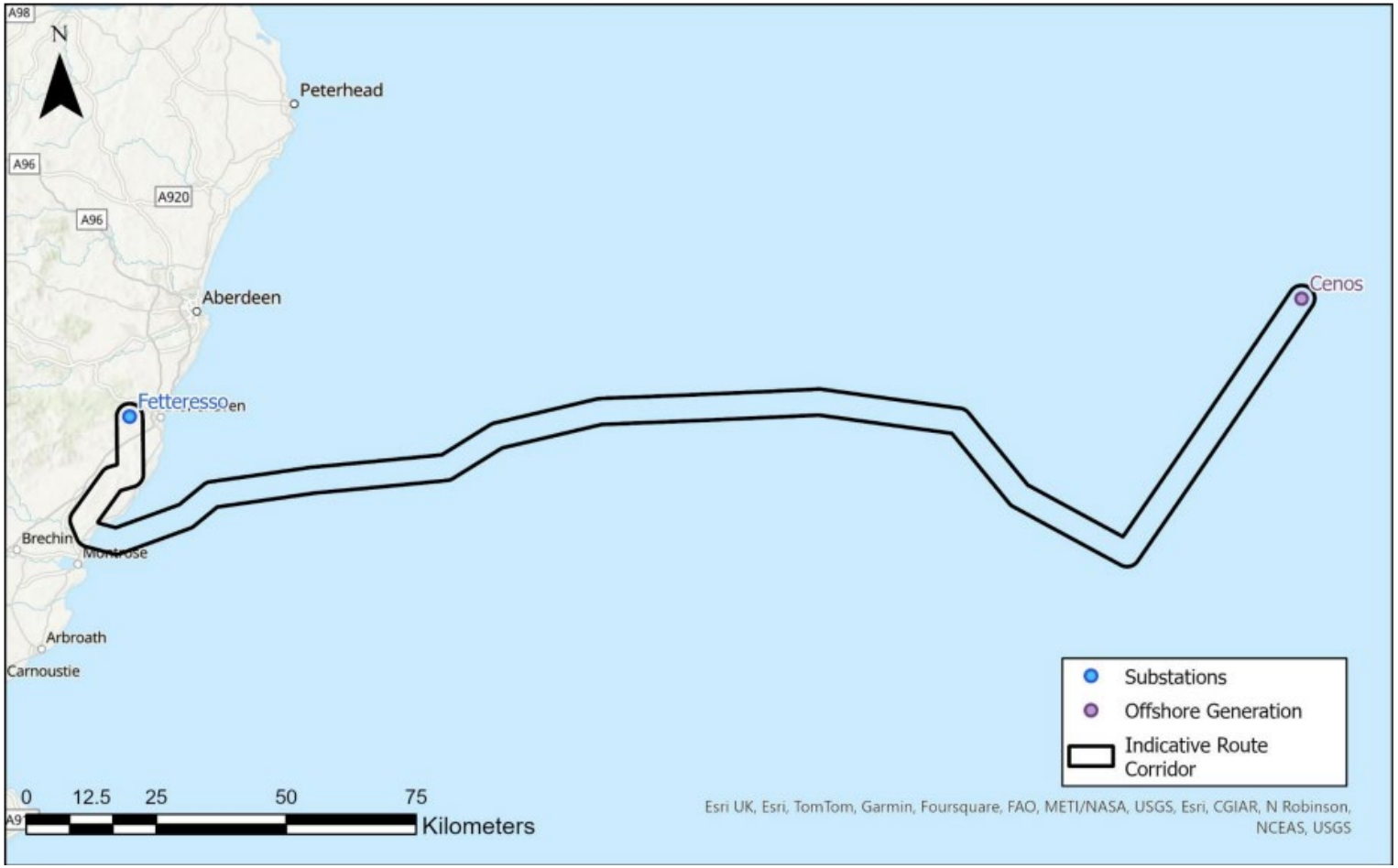


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The East of Gannet and Montrose Fields MPA is within the offshore route corridor and cannot be avoided as the generation sites is located within the MPA. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to benthic habitats and species (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. The East of Gannet and Montrose Fields MPA is within the offshore route corridor and cannot be avoided as the generation sites is located within the MPA (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities.	-2	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).				
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as five pipelines and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (two oil/gas wells and one oil/gas installation) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There is one known wreck location within the route corridor, which is located entirely offshore. This asset is avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L)	-1	0	0	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).				
Cumulative and in combination issues				
The route from Cedar to Cenos intersects the TOG route Cenos to Fetteresso.				

Cenos - Fetteresso						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Cenos	Fetteresso	301	1500	2 DC	1	N - HNDFUE INTOG
Overview of Route						



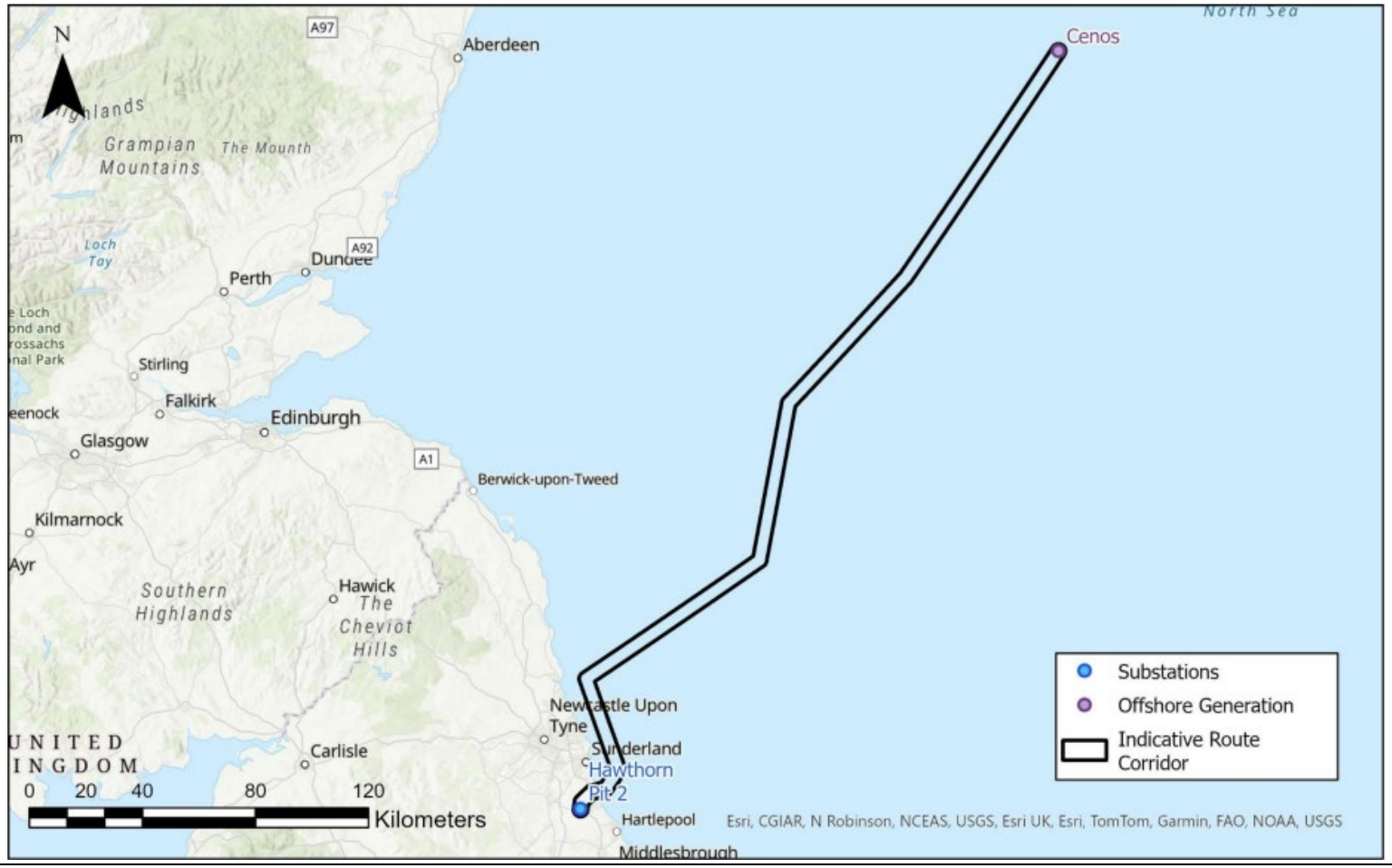
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The East of Gannet and Montrose Fields MPA is within the offshore route corridor and cannot be avoided as the generation sites is located within the MPA. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to benthic habitats and species (-2). The Cyrus and Kinnaber Links SSSI (designated for birds, grassland, moths and saltmarsh) is within the landfall route corridor and the potential to avoid the site is limited as the remainder of the landfall is occupied by the Milton Ness geological SSSI. There may be potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats and displacement of species (-2). There are known locations of Annex I reef and Annex I saltmarsh within the route corridor at landfall, however, these can be avoided by the cable route within the 5km indicative corridor. There may be potential for indirect effects within these sensitive areas in the short-term construction and decommissioning phases and during any cable maintenance activities depending on proximity (-1). There are also known areas of ancient woodland within the route corridor at landfall and onshore, however these can be avoided (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban area of Saint Cyrus is within the route corridor at landfall and onshore and the urban area of Inverbervie is also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for significant direct effects (-1). There is also an RYA boating area within the offshore and landfall route corridors which can be avoided. There is potential for short-term, negative effects on the local population, such as noise and disturbance and indirect water quality impacts to the boating area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	0/+2	0/+2	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are Annex 1 reefs which can be avoided, avoiding the potential for direct impacts (-1). The offshore East of Gannet and	-2	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Montrose Fields MPA, the Milton Ness SSSI and the St Cyrus and Kinnaber Links SSSI cannot be avoided within the route corridor (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. The areas identified as excellent quality agricultural land within the onshore route corridor are avoidable (-1). The agricultural lands are primarily good to moderate quality (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.				
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, these cannot be avoided and would have to be crossed; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; there is limited scope to avoid these at landfall and these cannot be avoided within the onshore corridor, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor. There are known locations of blue carbon habitat (Annex I saltmarsh) within the landfall route corridor, however these can be avoided. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
works (301.7 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as one offshore cable, ten pipelines and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, a railway line and onshore infrastructure (three gas pipelines) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one diffuser, 19 oil/gas wells and five oil/gas installations), two military areas and two urban areas (Saint Cyrus and Inverbervie) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs or Conservation Areas within the 5km indicative route corridor. There are 12 known wreck locations within the offshore route corridor. There are five Scheduled monuments within the route corridor at landfall and 13 Scheduled monuments and 43 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. The Arbuthnott House Park/Garden is within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) There are no AONBs, National Parks, Heritage Coasts, National Trust lands or National Trails within the 5km indicative route corridor. The urban area of Saint Cyrus is within the route corridor at landfall and onshore and the urban area of Inverbervie is also within the onshore route corridor. However, these urban areas can be avoided by the cable route within the corridor, avoiding the potential for visual effects to many receptors within these higher populated areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route from Cedar to Fetteresso partially shares a similar route to HND1 route SW_E1a to Fiddes and HNDFUE route SW_E3 to Fiddes. Offshore, the route crosses the HNDFUE route SW_E2a_2 to SW_E1c_1 and SW_E2a_2 to Richborough. As well as HND SW_E1b to Peterhead and HNDFUE roues SW_E2a_1 to Fiddes, SW_E2a_2 to Fiddes and SW_E2a_2 to EACN.				

Cenos - Hawthorn Pit 2						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Cenos	Hawthorn Pit 2	343	1400	2 DC	1	N - HNDFUE INTOG
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The East of Gannet and Montrose Fields MPA is within the offshore route corridor and cannot be avoided as the generation site is located within the MPA. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to benthic habitats and species (-2). The Durham Coast SAC (designated for vegetated sea cliffs) and Durham Coast SSSI are within the route corridor at landfall. There is limited scope to avoid these sites at landfall and there is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, such as damage to habitats. Assessment at the project stage should consider off-site impacts as the sites are nourished by coastal processes (-2). There are also several designated sites that are within the route corridor but can be avoided, avoiding the potential for direct impacts. The Hawthorn Dene SSSI (designated for woodland and grassland) and Hawthorn Quarry SSSI (designated for calcareous grassland) within the landfall and onshore route corridor; and the Dabble Bank SSSI (designated for grassland), Hesledon Moor East SSSI (designated for grassland), Hesledon Moor West SSSI (designated for grassland), Pig Hill SSSI (designated for grassland), and Tuthill Quarry SSSI (designated for grassland) are also within the onshore route corridor. There may be potential for short-term indirect impacts on the protected features of these sites during the construction and decommissioning phases and during cable maintenance activities that should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the route corridor offshore and at landfall, which cannot be avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term to permanent in nature in the footprint of infrastructure. There are also known areas of ancient woodland within the route corridor at landfall and onshore, however these can be avoided (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban areas of Seaham and Easington Colliery are within the route corridor at landfall and can be avoided. There are also several urban areas within the onshore route corridor, most of which can be avoided. For those that are not avoidable, there is potential for short-term noise and disturbance effects to many receptors within	-3	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
these higher populated areas during the construction and decommissioning phases and during cable maintenance activities (-3). There is also an unavoidable RYA boating area within the offshore and landfall route corridors. There is potential for short-term indirect negative effects such as water quality impacts, noise and disturbance to this receptor during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Hawthorn Quarry SSSI, Stony Cut, Cold Hesledon SSSI, Tuthill Quarry SSSI, Crime Rigg Quarry SSSI and the historic landfill site can be avoided, avoiding the potential for direct impacts (-1). However, there is limited potential to avoid the Durham Coast SSSI (-2). There are also offshore dredge and spoil dumping sites, the East of Gannet and Montrose Fields MPA and Annex 1 reefs that cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	*-2*	*-2*	*-2*	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall but there is potential to avoid these at landfall, however, these cannot be completely avoided within the onshore route corridor, therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; there is potential to avoid these at landfall but there is limited scope to completely avoid these within the onshore corridor, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore, and there is limited scope to completely avoid these, therefore, there is potential for temporary short-term effects on water	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).				
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (343.7 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as three offshore cables, eight pipelines, the Druridge Bay Military Area, three dredge and spoil dumping sites, and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads, a railway line and onshore infrastructure (National Grid towers and overhead lines) located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (four diffusers, eight oil/gas wells and five oil/gas installations) high-density shipping areas, Seaham Port, Dawdon Blast Beach Machine Gun Emplacement, onshore infrastructure (National Grid cables) and two urban areas (Easington Colliery and Seaham) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. However, there are several urban areas within the onshore route corridor that cannot be avoided. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-3	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-3). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, Parks and Gardens or Conservation Areas within the 5km indicative route corridor. There are 101 known wreck locations within the offshore route corridor. There are also three listed buildings at landfall and 31 listed buildings and five Scheduled monuments within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) The Durham Heritage Coast is within the route corridor at landfall and the Durham Coast National Trust land is within the landfall and onshore route corridor, with limited potential for avoidance. There is potential for short-term impacts on the landscape and views within these sensitive areas during the construction and decommissioning phases (-2). The urban areas of Seaham and Easington Colliery are within the route corridor at landfall and can be avoided. There are also several urban areas within the onshore route corridor, most of which can be avoided. For those that are not avoidable, there is potential for short-term visual effects to many receptors within these higher populated areas during the construction and decommissioning phases and during cable maintenance activities (-3). In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-3	0	0	Direct & Indirect
Cumulative and in combination issues				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The route from Cenos to Hawthorn Pit 2 partially shares a similar route to HND route SW_E1a to Hawthorn Pit. Offshore, the route crosses the HND route SW_E1a to R4_1 and HNDFUE routes SW_E1c_2 to Weston Marsh, SW_E2a_2 to Richborough and SW_E1c_1 to Lincolnshire Connection Node. The route also partially intersects the HND route PA_2 to Blyth. Offshore the route could potentially interact with HND routes SW_E1a to Blyth, SW_E1a to R4_1, SW_E1a to R4_2 and HNDFUE routes SW_E1c_1 to Lincolnshire Connection Node, SW_E1c_2 to Weston Marsh and Sw_E1c_2 to Richborough.				

Cenos - Lackenby						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Cenos	Lackenby	341	1500	2 DC	1	N - HNDFUE INTOG
Overview of Route						



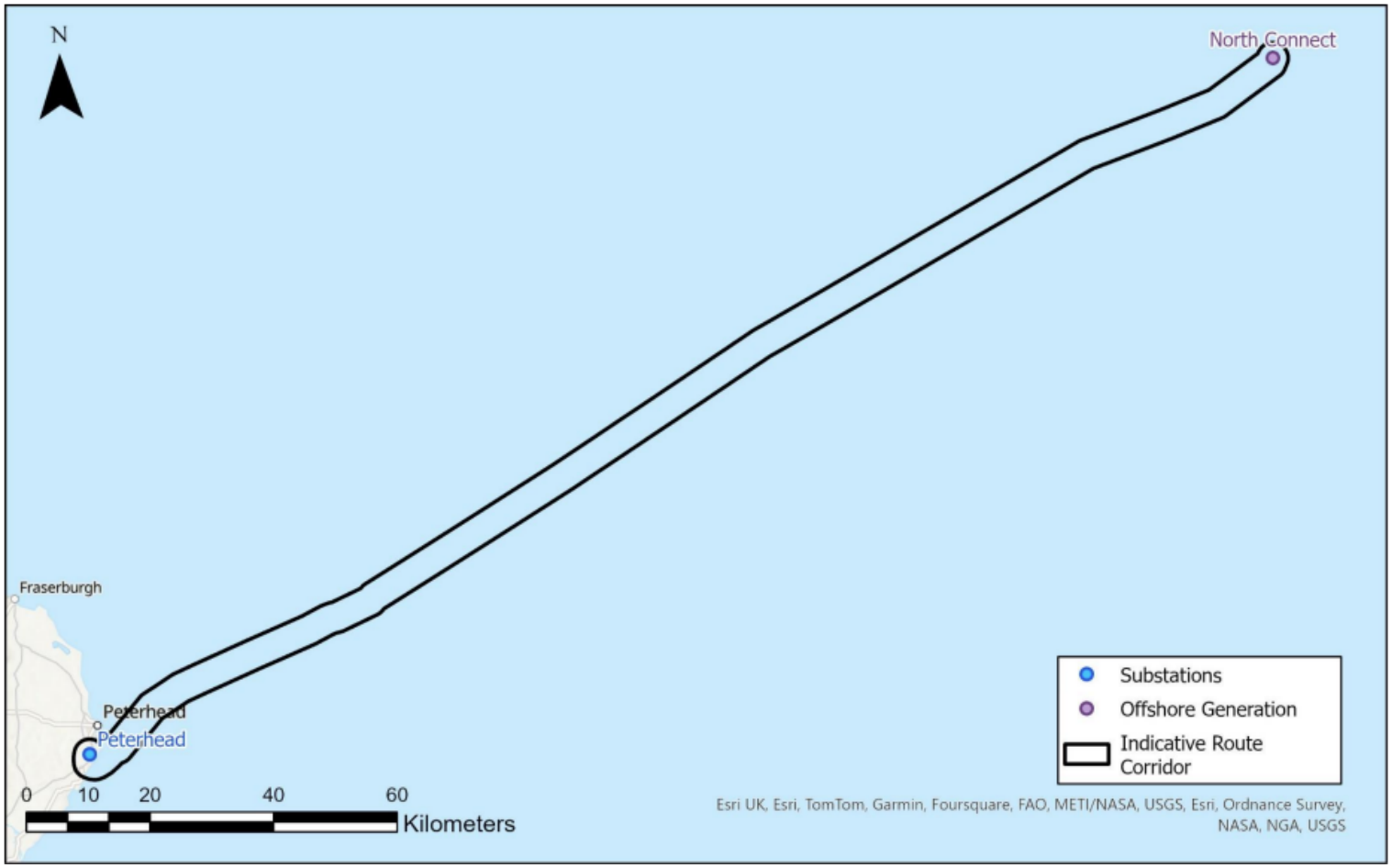
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The East of Gannet and Montrose Fields MPA is within the offshore route corridor and cannot be avoided as the generation site is located within the MPA. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to benthic habitats and species (-2). There are also several designated sites that are within the route corridor but can be avoided, avoiding the potential for direct impacts. The Teesmouth and Cleveland Coast SPA (designated for little tern and sandwich tern) is within the offshore and landfall route corridor; the Teesmouth and Cleveland Coast Ramsar site, and Teesmouth and Cleveland Coast SSSI (designated for coastal and wetland habitats) are within the route corridor at landfall; the Saltburn Gill SSSI (designated for woodland) is within the route corridor at landfall and onshore; and the Lovell Hill Pools SSSI (designated for wetland habitat) is within the onshore route corridor. There may be potential for indirect impacts on protected features, such as habitat and species disturbance, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the route corridor offshore and at landfall; areas at landfall cannot be completely avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be long-term to permanent in nature in the footprint of infrastructure. There are also known areas of ancient woodland within the route corridor at landfall and onshore, however these can be avoided (-1). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect
Population and Human Health (PHH) The urban areas of Redcar and Saltburn-by-the-Sea are within the route corridor at landfall with limited scope for avoidance owing to cliffs that limit landfall opportunities, and there is potential for short-term noise and disturbance effects to many receptors within these higher populated areas during the construction and decommissioning phases and during cable maintenance activities (-3). The urban areas of Redcar, Old Saltburn and New Marske are avoidable within the onshore corridor. There are three bathing water sites (Marske Sands, Redcar Stray, Saltburn) within the offshore and landfall route corridors which can be avoided. There is potential for indirect, short-term negative impacts such as noise and disturbance and water quality impacts to	-3	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
the bathing area during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).				
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. The Historic Landfill sites and the Teesmouth and Cleveland Coast SSSI at landfall can be avoided, avoiding the potential for direct impacts (-1). The offshore Annex 1 reefs and the East of Gannet and Montrose Fields MPA cannot be avoided (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good to moderate quality and the very good quality land can be avoided (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall, there is potential to avoid these rivers within the route corridor, but these cannot be avoided at landfall; therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; however, there is potential to avoid these, avoiding the potential for direct impacts.	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	0/+2	0/+2	Direct & Indirect
Climatic Factors (CF)	-1	0/+2	0/+2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (341.3 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).				
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as six offshore cables, 11 pipelines, the Druridge Bay Military Area and high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are four urban areas (Redcar, Old Saltburn, New Marske and Saltburn-by-the-Sea), roads and a railway line located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (three cables, one diffuser, 13 oil/gas wells and six oil/gas installations), Saltburn-by-the-Sea Port and onshore infrastructure (National Grid towers, cables and overhead lines) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-3). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-3	0/+2	0/+2	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs or Conservation Areas within the 5km indicative route corridor. There are 20 known wreck locations within the offshore route corridor. There is one Scheduled monument within the route corridor at landfall and 20 within the onshore route corridor, and there are 38 listed buildings within the route corridor at landfall and 150 within the onshore corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
decommissioning phases and during cable maintenance activities, depending on proximity to cable routes, which will need to be considered at the project stage. The Valley Gardens and Saltburn Park/Garden is within the onshore route corridor but can be avoided by the cable route within the corridor, avoiding the potential for direct impacts. There may be potential for short-term impacts on the setting of this heritage asset during the construction and decommissioning phases, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).				
Landscape / Seascape and Visual Amenity (L) The North Yorkshire and Cleveland Heritage Coast is within the offshore, landfall and onshore route corridor with limited potential for avoidance at landfall. There is also limited scope to avoid the Cleveland Way National Trail within the route corridor at landfall. There is potential for short-term direct impacts on landscape and views within these sensitive landscape areas during the construction and decommissioning phases and during cable maintenance activities (-2). The Warsett Hill National Trust land is also within the route corridor at landfall but is avoidable. The urban areas of Redcar and Saltburn-by-the-Sea are within the route corridor at landfall with limited scope for avoidance owing to cliffs that limit landfall opportunities, and there is potential for short-term visual effects to many receptors within these higher populated areas during the construction and decommissioning phases and during cable maintenance activities (-3). The urban areas of Redcar, Old Saltburn and New Marske are avoidable within the onshore corridor. In general, there is also potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-3	0	0	Direct & Indirect
Cumulative and in combination issues				
The route from Cenos to Lackenby 2 crosses the HND route EEIn3 SW_E1a to R4_1 and HNDFUE routes SW_E1c_2 to Weston Marsh, SW_E1c_1 to Lincolnshire Connection Node and SW_E2a_2 to Richborough. Offshore the route could potentially interact with HND routes SW_E1a to Blyth, SW_E1a to R4_1, SW_E1a to R4_2 and HNDFUE routes SW_E1c_1 to Lincolnshire Connection Node, SW_E1c_2 to Weston Marsh and Sw_E1c_2 to Richborough.				

North Connect – Peterhead1						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
North Connect	Peterhead1	226	1400	2 DC	1	N - HNDFUE INTOG
Overview of Route						



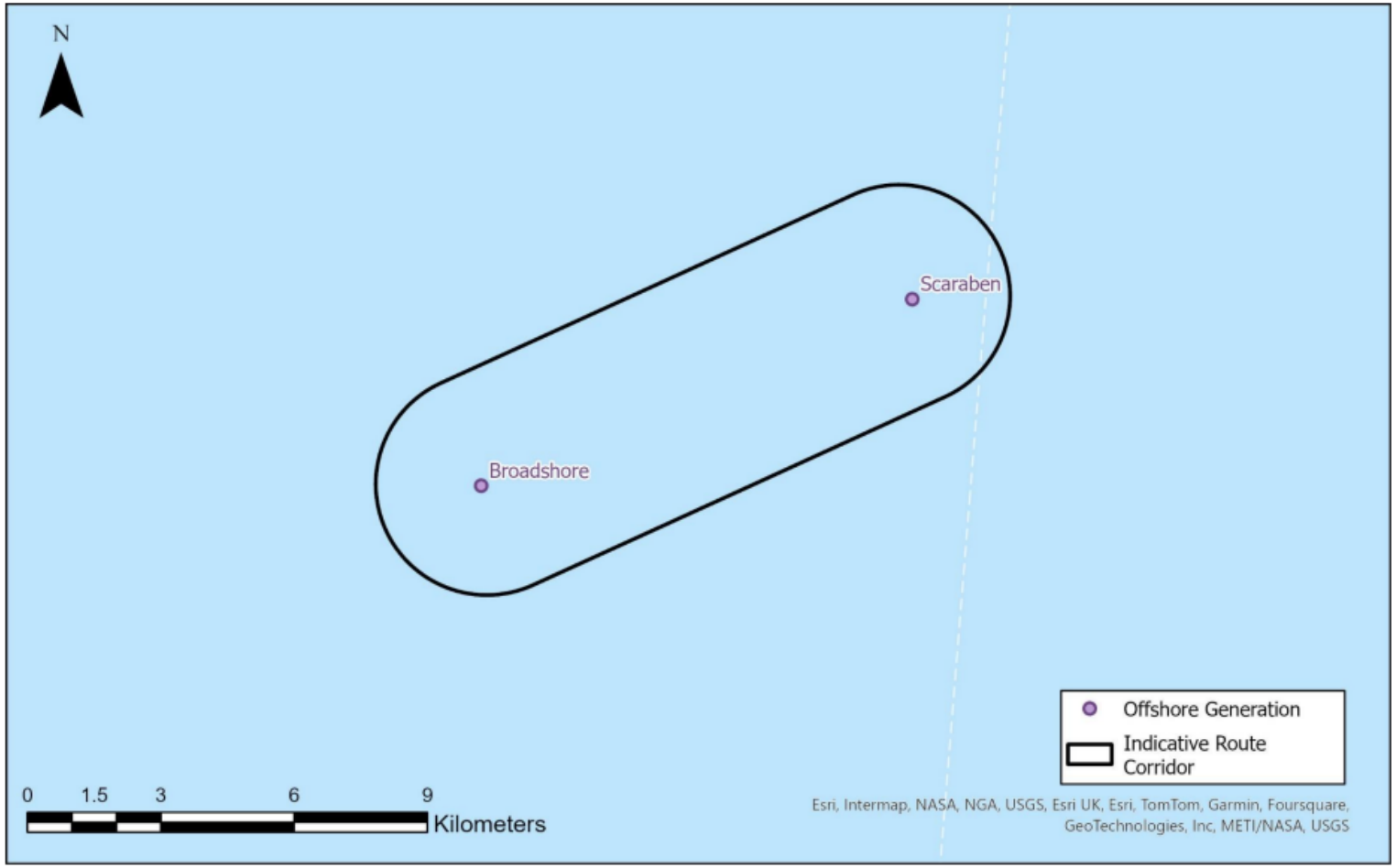
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) The Buchan Ness to Collieston SPA (designated for seabirds, including black-legged kittiwake, common guillemot, herring gull, European shag and northern fulmar) is within the offshore and landfall route corridor and cannot be avoided. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including disturbance and displacement of species and damage to supporting habitats (-2). The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) is within the offshore route corridor and cannot be avoided. There is potential for impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage, disturbance and displacement of minke whales (-2). The shelf feature of the sites can be avoided by the cable route including known locations of protected habitat. The Buchan Ness to Collieston Coast SAC (designated for vegetated cliff habitat) and the Bullers of Buchan Coast SSSI are within the route corridor at landfall and there is limited scope to avoid these sites. There is potential for direct and indirect impacts within these sites in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats (-2). The Buchan Ness to Collieston Coast IBA is also within the route corridor at landfall and there is limited scope to avoid the site. There is potential for direct and indirect impacts within this site in the short-term construction and decommissioning phases and during cable maintenance activities, including damage to habitats (-1). The Scanner Pockmark SAC (designated for submarine structures made by leaking gases) is also within the offshore route corridor but can be avoided. There may be potential for indirect impacts on protected features of the site, which should be considered at the detailed design stage (-1). There are known locations of Annex I reef within the offshore route corridor and within the route corridor at landfall that cannot be completely avoided. There is potential for direct and indirect impacts on these habitats during construction and decommissioning (-2); direct impacts have the potential to be permanent in nature. There is also an area of Annex I submarine structures within the offshore route corridor; however, this is avoidable, avoiding the potential for direct impacts (-1) In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Population and Human Health (PHH) The urban area of Boddum is within the route corridor at landfall and onshore but can be avoided by the cable route, avoiding the potential for significant direct effects (-1). There is potential for short-term, negative effects on the local population, such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor. There are dredge and spoil dumping sites that can be avoided, avoiding the potential for direct impacts (-1). However, the Annex 1 reefs, the Southern Trench MPA, the Scanner Pockmark MPA and the Bullers of Buchan Coast SSSI cannot be avoided, increasing the risk for direct impacts (-2). There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments and onshore soils and long-term effects in the footprint of infrastructure. There are no areas identified as excellent quality agricultural land within the onshore route corridor. The agricultural lands are primarily good quality (-1). There is also potential for a short-term disturbance of these areas in the construction and decommissioning phases and during cable maintenance activities.	-2	-2	-2	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor. There are lakes within the 5km indicative route corridor onshore and at landfall, but there is potential to avoid these, avoiding the potential for direct impacts. There are rivers within the onshore route corridor and at landfall; there is potential to avoid these at landfall, but these cannot be completely avoided within the onshore route corridor, therefore, there is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are National Flood Zones within the onshore route corridor and at landfall; these can be avoided within the onshore corridor but cannot be avoided at landfall, therefore there is potential for increased flood risk that will need to be considered during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There are dredge and spoil dumping sites offshore, however there is potential to avoid these within the route corridor, avoiding the potential for direct impacts.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works (226.2 km route length) during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as two offshore cables, eleven pipelines, the Buchan Deep Demo wind farm cable, high-density shipping areas, high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. Additionally, there are roads located within the onshore portion of the 5km indicative route corridor, which cannot be avoided. There is offshore infrastructure (one cable, 102 oil/gas wells and five oil/gas installations), two dredge and spoil dumping sites, the proposed Pale Blue Dot Energy (Acorn) Carbon Capture Storage site, two proposed energy generation cables and urban areas located at Boddam located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is	-2	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).				
Cultural, Architectural and Archaeological Heritage (CH) There are no WHS, registered battlefields, historic MPAs, or Conservation Areas within the 5km indicative route corridor. There are 13 known wreck locations within the offshore route corridor and one at landfall; however, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There is one Scheduled monument and 59 listed buildings within the route corridor at landfall, and two Scheduled monuments and 60 listed buildings within the onshore route corridor. However, these can all be avoided by the cable route, avoiding the potential for direct negative impacts. There may be potential for indirect impacts on these heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, depending on proximity to cable routes. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There are no designated landscape areas within the route corridor. The urban area of Boddum is within the route corridor at landfall and onshore but can be avoided by the cable route, avoiding the potential for visual effects to many receptors within this higher populated area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Direct & Indirect
Cumulative and in combination issues				
The route corridor from North Connect to Peterhead intersects the HND route SW_NE7 to Peterhead2/DCSS and HNDFUE route SW_E2b to Peterhead2/DCSS. The route may potentially interact with the HND routes SW_NE7 to SW_E1a and SW_E1b to Peterhead.				

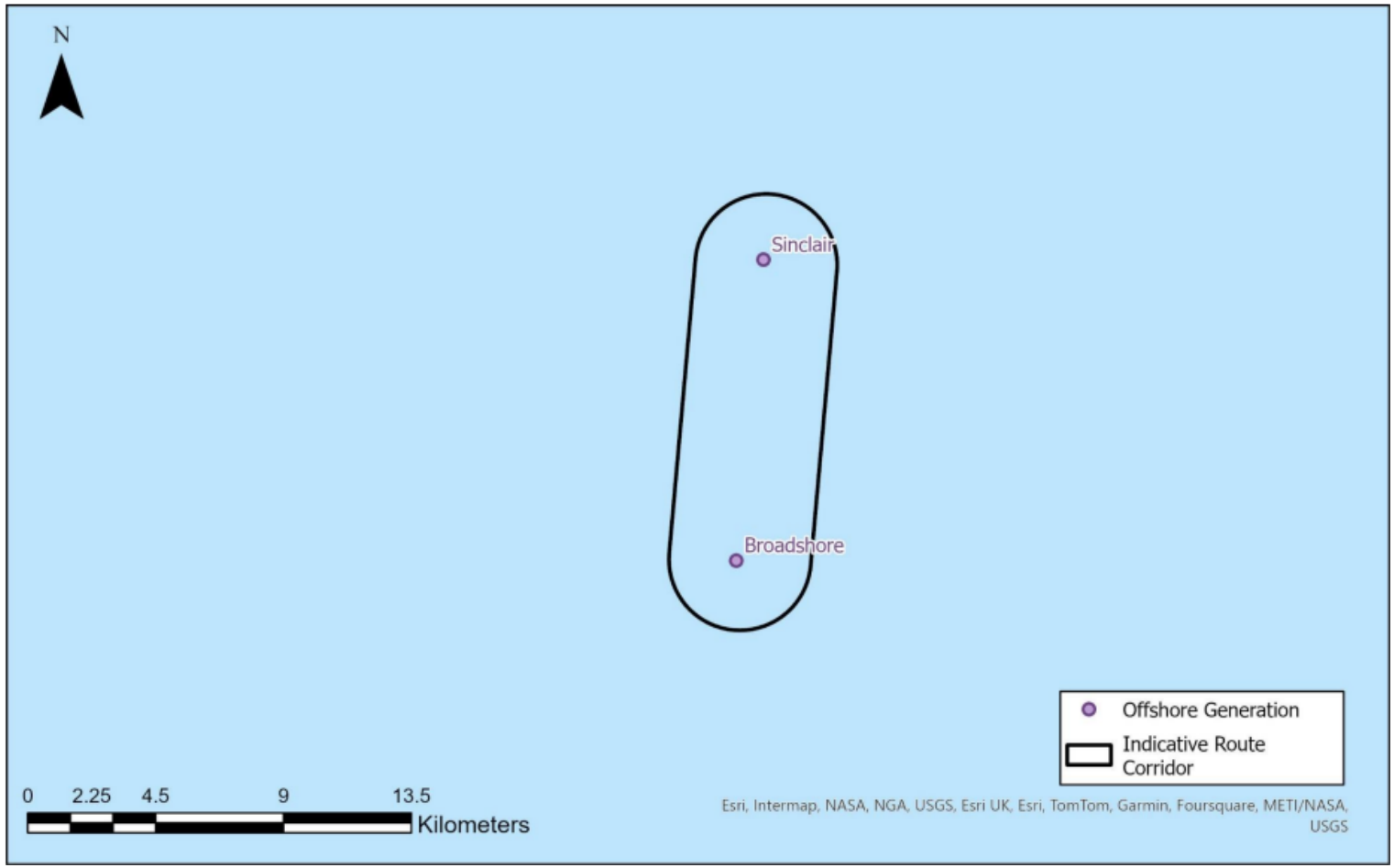
Scaraben - Broadshore						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Scaraben	Broadshore	10.2	100	1 AC	1	N - HNDFUE INTOG
Overview of Route						



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is offshore infrastructure (two oil/gas wells) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. There is potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There is one known wreck location within the route corridor, which is located entirely offshore. This asset is avoidable by the cable route within the corridor, avoiding the potential for direct impacts. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect
Cumulative and in combination issues				
There are no cumulative or in-combination constraints.				

Sinclair - Broadshore						
Start Point	**End Point**	**Total Length (km)**	**Capacity (MW)**	**Cables**	**Trenches**	**Preferred Option (Y/N)**
Sinclair	Broadshore	10.4	200	2 AC	2	N - HNDFUE INTOG
Overview of Route						



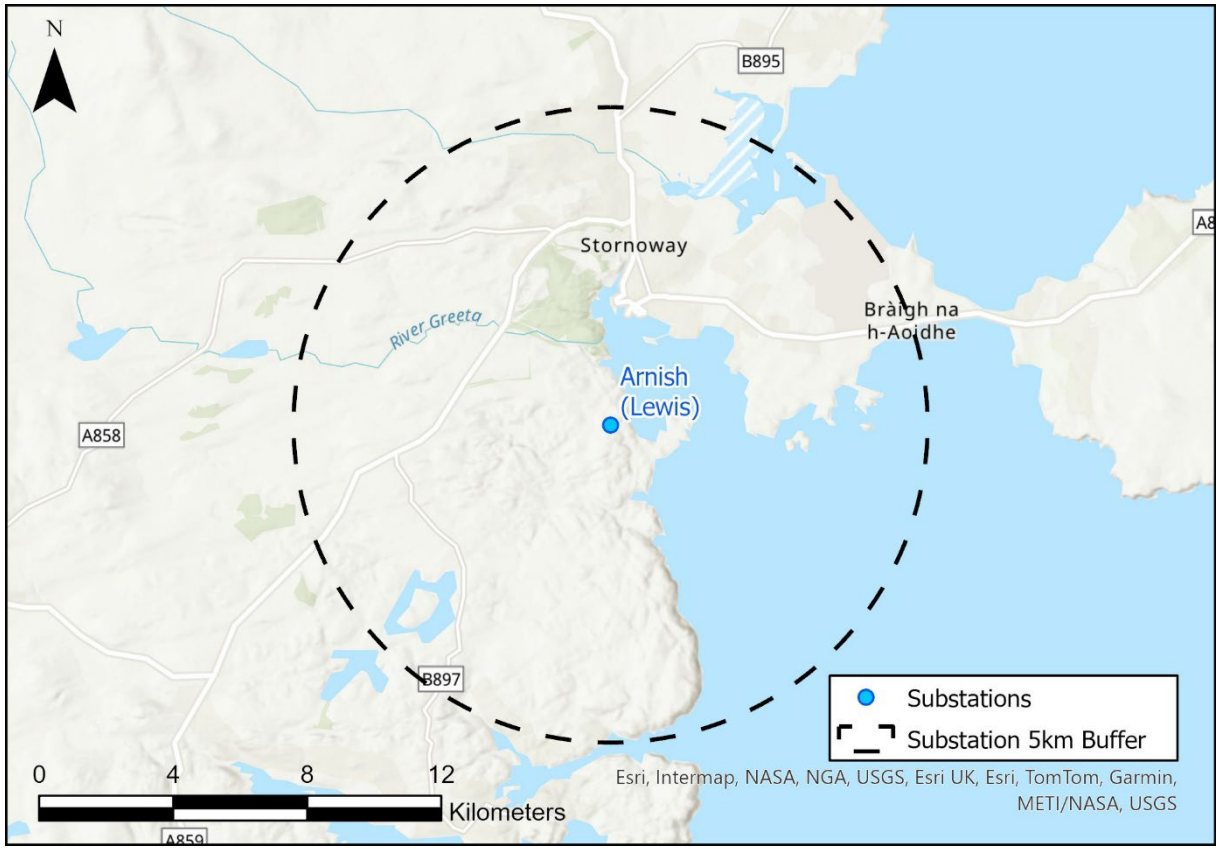
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna (BFF) There are no designated sites and no known locations of sensitive habitats within the 5km indicative route corridor, which is located entirely offshore. In general, there is potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. There are no identified PHH sensitivities (urban areas, major settlements, RYAs, bathing areas) located within the 5km route corridor. There is potential for indirect, short-term negative impacts such as noise and disturbance during the construction and decommissioning phases and during cable maintenance activities (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL within the route corridor, which is located entirely offshore. There is potential for short-term temporary negative effects due to loss or displacement of offshore sediments during the construction and decommissioning phases and during cable maintenance activities (-1).	-1	0	0	Direct & Indirect
Water (W) There is unlikely to be potential for significant negative effects on W within the route corridor, which is located entirely offshore. In general, there is potential for short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Direct
Air (A) There is unlikely to be potential for significant negative effects on A within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF within the route corridor, as there are no identified sensitivities. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	0/+1	0/+1	Direct & Indirect
Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA as high-density fishing areas are located within the 5km indicative route corridor and cannot be avoided. There is offshore infrastructure (one oil/gas well) located within the 5km indicative route corridor, which can be avoided, avoiding the potential for direct negative effects. Potential for positive effects from the facilitation of new renewable energy infrastructure. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect
Cultural, Architectural and Archaeological Heritage (CH) There are no known cultural heritage assets within the route corridor, which is located entirely offshore. In general, there is potential for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L within the route corridor, which is located entirely offshore. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases (-1).	-1	0	0	Indirect
Cumulative and in combination issues				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are no cumulative or in-combination constraints.				

F.2 SEA Light Assessment of Interface Areas

Arnish Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_N3	1 Developer AC Substation	Yes – HNDFUE ScotWind
SW_N4	1 Developer AC Substation	Yes – HND1
SW_N2	3 Developer AC Substations	No – HNDFUE ScotWind
Overview of Interface Area		

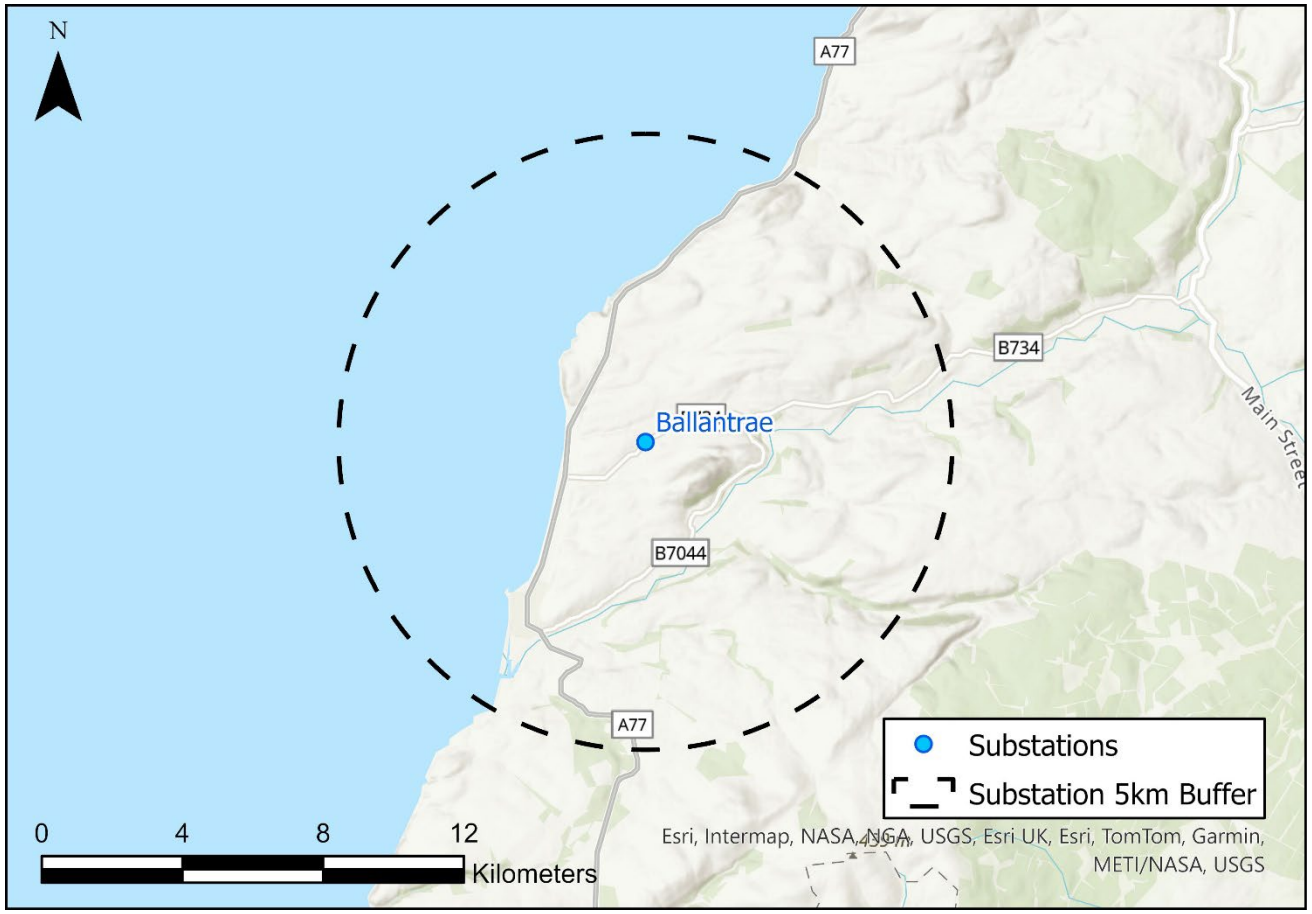


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SSSI, namely Tong Saltings SSSI, located in the north-east of Arnish. The Stornoway to Back, Lewis IBA is located to the north-east at Stornoway. The SSSIs and IBA are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. Additionally, the Inner Hebrides and the Minches SAC is located offshore and is adjacent to the coastline in the south of the study area. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban area of Stornoway is located to the north of Arnish. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There is one SSSI, namely Tong Saltings SSSI, designated for geological interest and is located in the north-east of Arnish. There are areas of moderately sloping land located across Arnish. The agricultural land is a mixture of Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), Class 5.3 (Land capable of use as improved grassland. Pasture deteriorates quickly), Class 6.1 (Land capable of use as rough grazings with a high proportion of palatable plants), Class 6.2 (Land capable of use as rough grazings with moderate quality plants) and Class 6.3 (Land capable of use as rough grazings with low quality plants). Other areas within the study area are Urban. The SSSI and sloping land are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout the Arnish study area, the most significant of which are the surface waters of the Abhainn Lacasdall, Bayhead River, Abhainn Ghrioda and Abhainn Leireabhaigh. There are National Flood Zones located along the Coastline and rivers. The rivers, lakes and flood zones within the	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.				
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban area of Stornoway is located to the north of Arnish. The port of Stornoway is located to the north within Stornoway. Port-Adhair Steòrnabhaigh/Stornoway Airport is located to the north-east. The Drill Hall Military Area is located within Stornoway. There is a road network throughout the area comprising A, B, minor, local and restricted roads, concentrated within the urban areas of Stornoway. There is electrical transmission infrastructure within the surrounding area, including one 132kV overhead line within the west connecting into Stornoway 132kV Substation. The urban areas, roads, railways, airport, port, military area and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 106 listed buildings in the study area, predominantly concentrated in Stornoway. There are also 5 scheduled monuments in the study area. There is one Parks and Gardens (Lews Castle And Lady Lever Park) located in the west of Stornoway. These listed buildings, scheduled monuments and park and garden can	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity The urban area of Stornoway is located to the north of Arnish. The urban area is within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Arnish requires two Developer AC Substations within the Preferred Option. 6 Bays and 1 TO DC substation are also required at Arnish. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SSSI and IBA present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the SSSI within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Ballantrae Onshore Interface Area		
Start Point	**Requirements**	**In Preferred Option (Y/N)**
SW_W1	Busbar station	Y - HND
Overview of Interface Area		

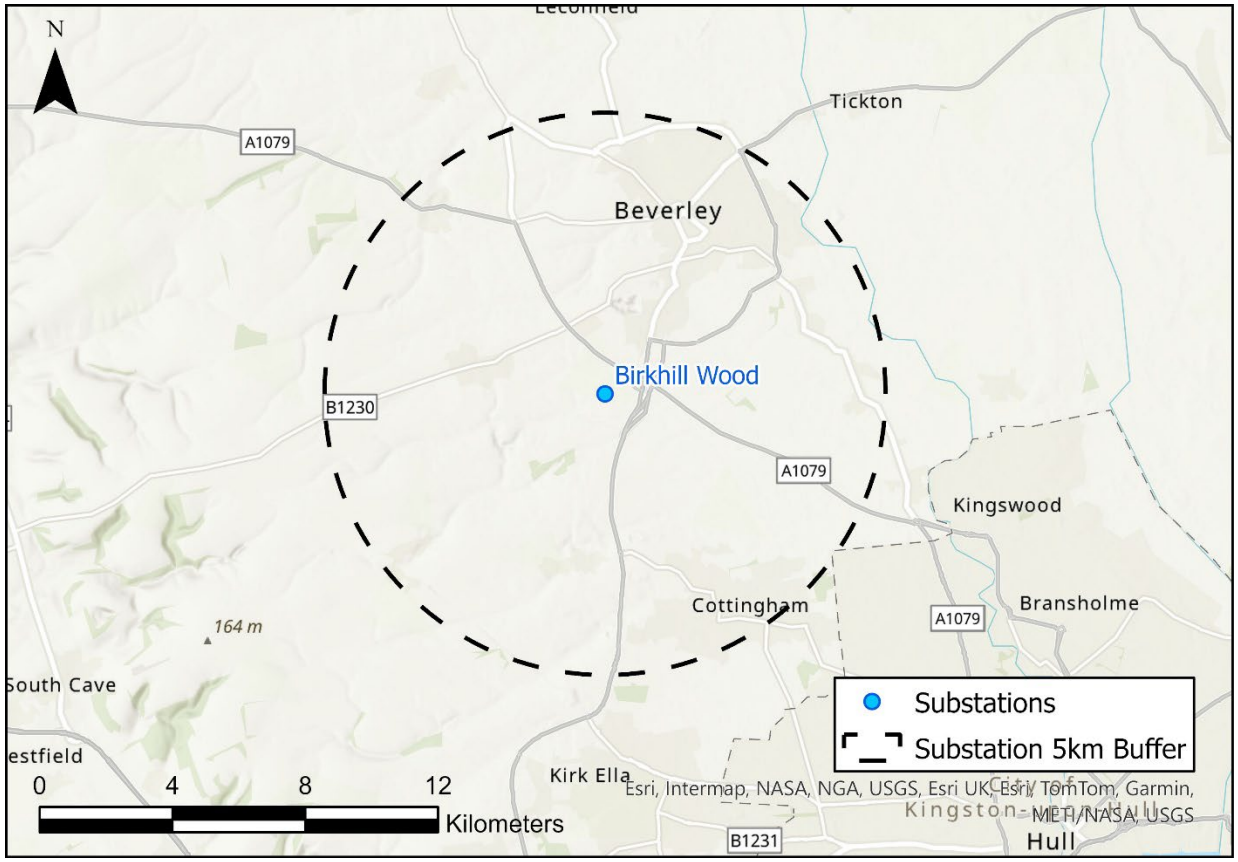


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SAC, namely Lendalfoot Hills Complex SAC, located in the north-east of Ballantrae. The Glen App and Galloway Moors SPA / IBA is partially located in the south-east of Ballantrae. There are nine SSSIs, namely Ballantrae Shingle Beach SSSI, Bennane Head Grasslands SSSI, Craig Wood SSSI, Girvan to Ballantrae Coast Section SSSI, Glen App and Galloway Moors SSSI, Knockdaw Hill SSSI, Knockdolian Hill SSSI, Knockormal SSSI and Littleton and Balhamie Hills SSSI. The entire Ballantrae area is located within the Galloway and Southern Ayr Biosphere Reserve. There are areas of ancient woodlands, predominantly located in the east and south of Ballantrae. The SAC. SPA, SSSIs, IBA, Biosphere Reserve and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are no large urban areas within the Ballantrae study area. Any settlements/urban areas within the 5km buffer area can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are two SSSIs, namely Ballantrae Shingle Beach SSSI and Girvan to Ballantrae Coast Section SSSI, designated for geological interest. There are some areas of upland and moderately sloping areas located throughout Ballantrae, with small, scattered areas of steeply sloping land. The agricultural land is a mixture of Class 2 (Land capable of producing a wide range of crops), Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), Class 5.1 (Land capable of use as improved grassland. Few problems with pasture establishment and maintenance and potential high yields), Class 5.2 (Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain), Class 5.3 (Land capable of use as improved grassland. Pasture deteriorates quickly) and Class 6.2 (Land capable of use as rough grazings	-1	-1	-1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
with moderate quality plants). There is potential to avoid the SSSIs, landfills and areas of prime agricultural land within the 5km buffer area, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.				
Water There are rivers and lakes located throughout Ballantrae, the most significant of which is the River Stinchar and its tributaries. There are a number of national flood zones located along the rivers within Ballantrae. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. There is potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. There is potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. There is potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure, reducing the requirement for the burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There is an extensive road network throughout the area comprising B, minor, local, primary and restricted roads. The roads within the study area can be avoided, avoiding the potential for significant direct effects. There is potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+1	-1/+1	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There is one Garden and Designed Landscape located in the south of Ballantrae. There are 35 listed buildings in the study area. There are also seven scheduled monuments. These Gardens and Designed Landscapes, listed buildings, and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. There is potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity The Ayrshire Coastal Path is located in the west of Ballantrae. The Ayrshire Coastal Path is within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
Given that Ballantrae requires one DC Converter Station, and no other developments within the Preferred Option, there is limited potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area.				

Birkhill Wood Onshore Interface Area		
Start Point	**Requirements**	**In Preferred Option (Y/N)**
R4_1	1 DC Converter Station	Y - HND
R4_2	1 DC Converter Station	Y - HND
PA_1	1 DC Converter Station	Y - HND
Overview of Interface Area		

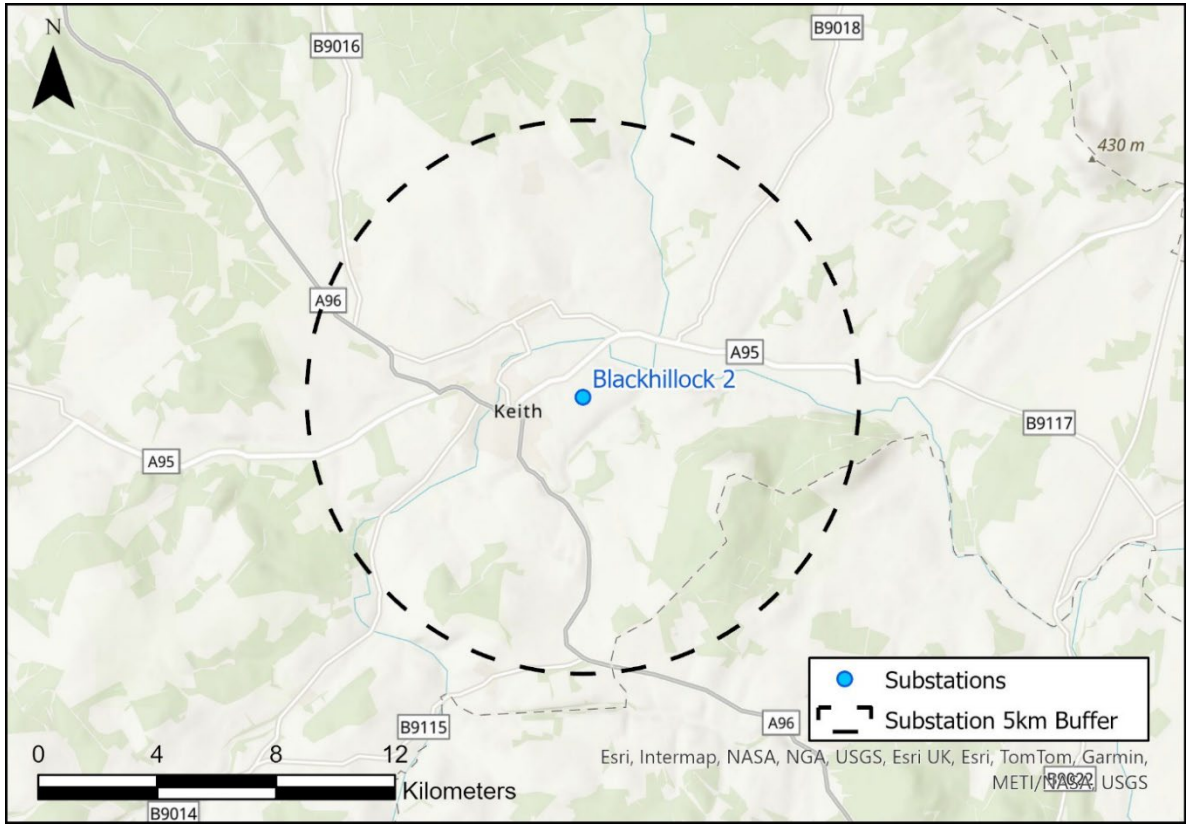


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna The Burton Bushes SSSI is located in the north of Birkhill Wood. There are small areas of ancient woodland in the south. The SSSI and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas are located in the north-east (Beverley), east (Woodmansey), south-east (Cottingham), south-west (Skidby and Little Weighton) and west (Walkington). The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are landfills located throughout Birkhill Wood. There are small areas of moderately sloping land. The agricultural land is predominantly Grade 2 (Very Good Quality Agricultural Land), with areas of Grade 3 (Good to Moderate Quality Agricultural Land) and Class 4 (Poor Quality Agricultural Land). Other areas within the study area are considered to be Non-Agricultural and Urban. There is limited potential to avoid the areas of prime agricultural land within the 5km buffer area, as such potential for moderate effects on GSL cannot be avoided within the 5km buffer area. There is potential to avoid the areas of landfill within the 5km buffer area, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water There are rivers and lakes located throughout Birkhill Wood. There are a number of national flood zones located within the east of Birkhill Wood. There are areas benefitting from flood defences located in the east. The rivers, lakes, flood zones and areas benefitting from flood defences within the study area can be avoided, avoiding the potential for significant direct effects. There is potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air	-1	0/+2	0/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. There is potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for the burning of fossil fuels and therefore anthropogenic pollution.				
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. There is potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas are located in the north-east (Beverley), east (Woodmansey), south-east (Cottingham), south-west (Skidby and Little Weighton) and west (Walkington). There is an extensive road network throughout the area comprising A, B, minor, local, primary and restricted roads. There is a railway line located in the east running north to south. There is a range of electrical transmission infrastructure within the surrounding area, including the Creyke Beck 400kV substation, the Dogger Bank A Wind Farm 400kV Converter Station and the Beverley 132kV substation. There are 400kV, 275kV, 132kV and 33kV overhead lines connecting into these substations. The urban areas, roads, railway line and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. There is potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are two Parks and Gardens, mainly located in the south of Birkhill Wood. There are 525 listed buildings, predominantly located within the urban areas of Birkhill Wood. There are 25 scheduled monuments within Birkhill Wood. These Parks and Gardens, listed buildings, and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. There is potential for short-term, indirect negative effects on the setting of heritage features or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity The urban areas are located in the north-east (Beverley), east (Woodmansey), south-east (Cottingham), south-west (Skidby and Little Weighton) and west (Walkington). The urban areas are within the study area, but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Birkhill Wood requires three Developer DC Converter Stations within the Preferred Option. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SSSI and ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Blackhillock Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
Shetland Hub	1 DC Converter Station	Yes – HNDFUE
Overview of Interface Area		

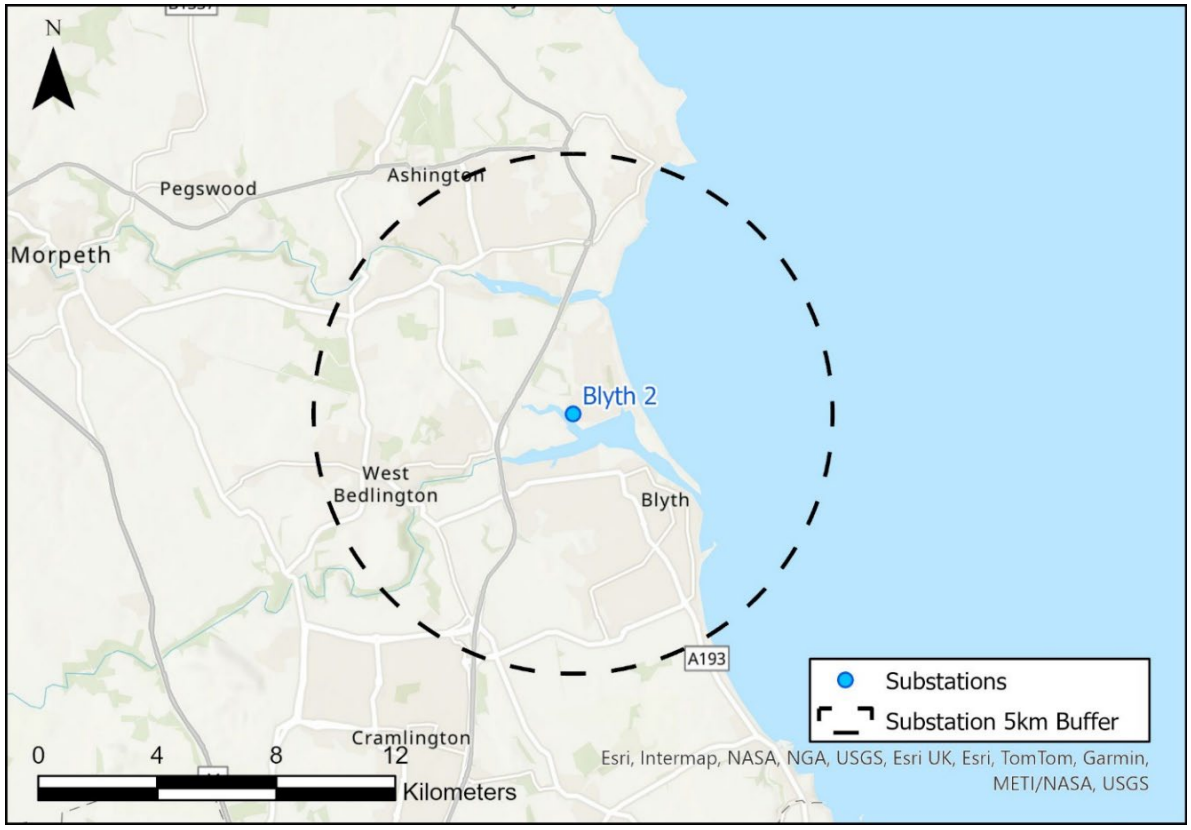


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are areas of ancient woodland located within the vicinity of Blackhillock, predominantly in the south. There is one SSSI, namely Mill Wood SSSI. The areas of ancient woodland and the SSSI are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There is an urban area to the west of Blackhillock at Keith. The settlement/urban area is within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are areas of moderately sloping land located across Blackhillock. There are large upland areas located to the north and south. The agricultural land is a mixture of Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), Class 5.2 (Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain), Class 5.3 (Land capable of use as improved grassland. Pasture deteriorates quickly) and Class 6.3 (Land capable of use as rough grazings with low quality plants). The areas of sloping land, uplands and prime agricultural land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout the Blackhillock study area, the most significant of which are the surface waters of the River Isla. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There is an urban area to the west of Blackhillock at Keith. There is a road network throughout the area comprising A roads, B roads, minor, local, primary and restricted roads across Blackhillock. There is a railway line which runs east to west through Blackhillock. There is electrical transmission infrastructure within the surrounding area, including a 400kV overhead line, a 275kV overhead line and three 132kV overhead lines. The Moray West Wind Farm Export Cable, Beatrice Wind Farm Export Connection and Caithness-Moray Link are located within the area. The Blackhillock 400kV substation, Blackhillock 320kV DC Converter Station, Beatrice Wind Farm Substation, Keith 275kV substation and Keith Greener Grid Park 132kV substation are all located within the area. The urban area, roads, railway and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 80 listed buildings in the study area. There is one scheduled monument within the 5km study area. These listed buildings and scheduled monument can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity There is an urban area to the west of Blackhillock at Keith. The urban area is within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Blackhillock requires no developer infrastructure within the Preferred Option. 1 Bay and 1 DC TO Converter Station is required at Blackhillock. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the areas of ancient woodland and SSSI present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Blyth 2 Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_E1c_2	1 DC Developer Converter Station	Yes - HND
Overview of Interface Area		

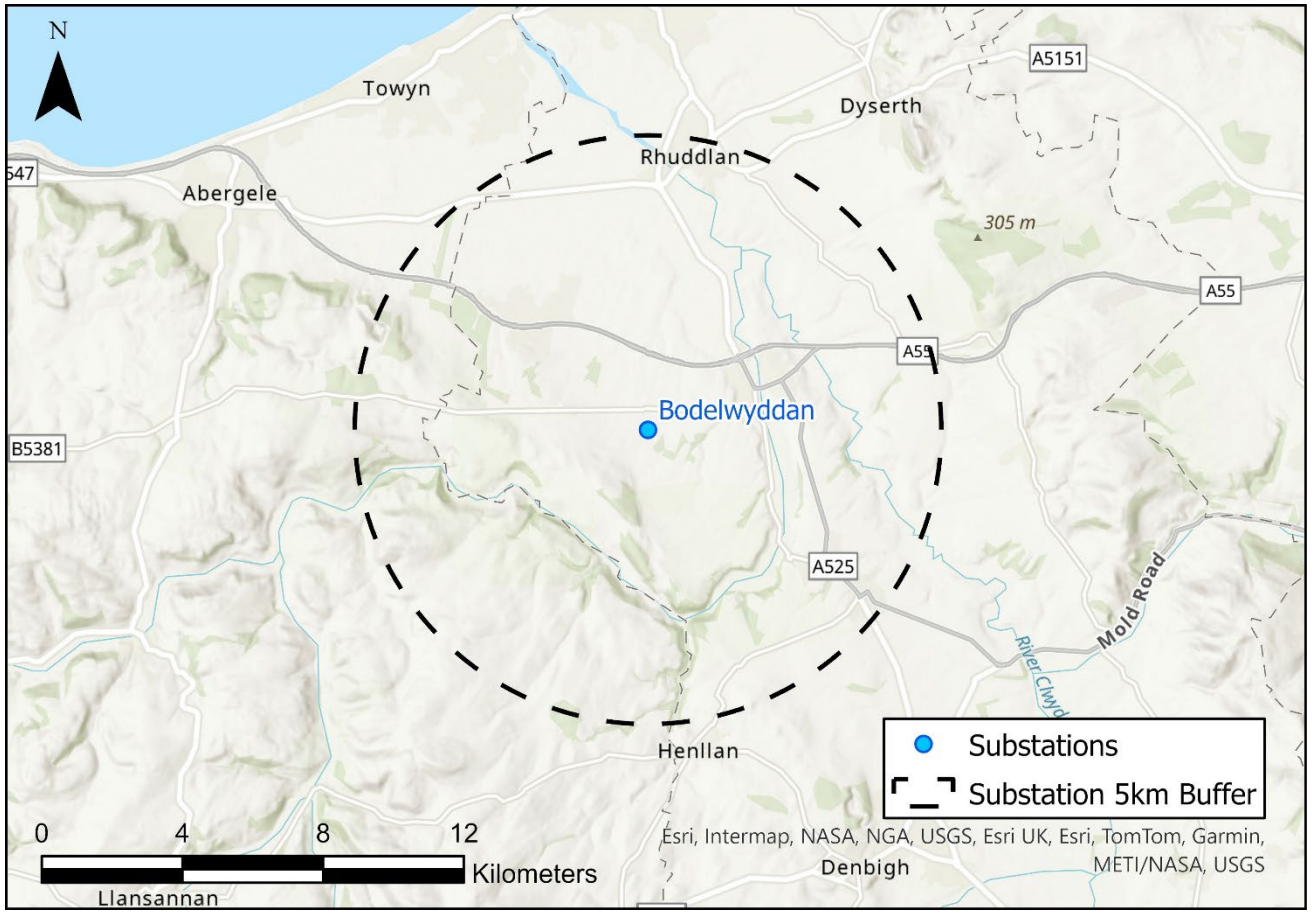


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are two SPAs located predominantly offshore and within the River Blyth, namely Northumberland Marine SPA and Northumbria Coast SPA. The Northumbria Coast Ramsar/IBA are located predominately offshore. There are two SSSIs, Bamburgh Dunes SSSI and Cresswell and Newbiggin Shores SSSI. Both of which are located offshore. There are areas of ancient woodland located within the west of Blyth 2. The SPAs, Ramsar, IBA, SSSIs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are urban areas including Blyth in the south-east, West Bedlington in the south-west, Choppington and Ashington in the north-west and Newbiggin-by-the-Sea in the north-east. The settlements/urban areas span much of the 5km buffer area; there is scope to avoid these urban areas, however, depending on the location, there is potential for moderate direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-2	-2/+2	-2/+2	Indirect / Indirect
Geology, Soils and Land Use There are two SSSIs designated for their geological interest., Bamburgh Dunes SSSI and Cresswell and Newbiggin Shores SSSI. Both of which are located offshore. There are 22 landfill sites located across Blyth 2. There are areas of moderately sloping land located along the rivers within Blyth 2. The agricultural land is a Grade 3 (good to moderate quality agricultural land). There are also large urban areas. There is limited scope to avoid the areas of prime agricultural land due to the presence of urban areas within the 5km buffer area, as such, potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The SSSIs and landfill sites are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the Blyth 2 study area, the most significant of which are the surface waters of the River Blyth and the River Wansbeck. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.				
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There are urban areas including Blyth in the south-east, West Bedlington in the south-west, Choppington and Ashington in the north-west and Newbiggin-by-the-Sea in the north-east. There is one Port, Port of Blyth. There is a road network throughout the area comprising A roads, B Roads, minor, local and restricted roads across Blyth 2. There are railway lines located across Blyth 2. There is electrical transmission infrastructure within the surrounding area, including a 400kV overhead line and two 275kV overhead lines and a 132kV overhead line. The North Sea Link cable is located within the area. The Blyth 2 400kV substation and Cambois 515kV DC Converter Station is located in the area. The urban areas, roads, railway lines and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are 74 listed buildings in the study area. There is one scheduled monument within the 5km study area. These listed buildings and scheduled monument can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity There are urban areas including Blyth in the south-east, West Bedlington in the south-west, Choppington and Ashington in the north-west and Newbiggin-by-the-Sea in the north-east. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Blyth 2 requires one DC Converter Station within the Preferred Option. The combination of this development has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SPAs, Ramsar, IBA, SSSIs and areas of ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the SSSIs, landfill sites and areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Bodelwyddan Onshore Interface Area		
Start Point	**Requirements**	**In Preferred Option (Y/N)**
R4_4	1 AC Substation	Y – HND1
Overview of Interface Area		

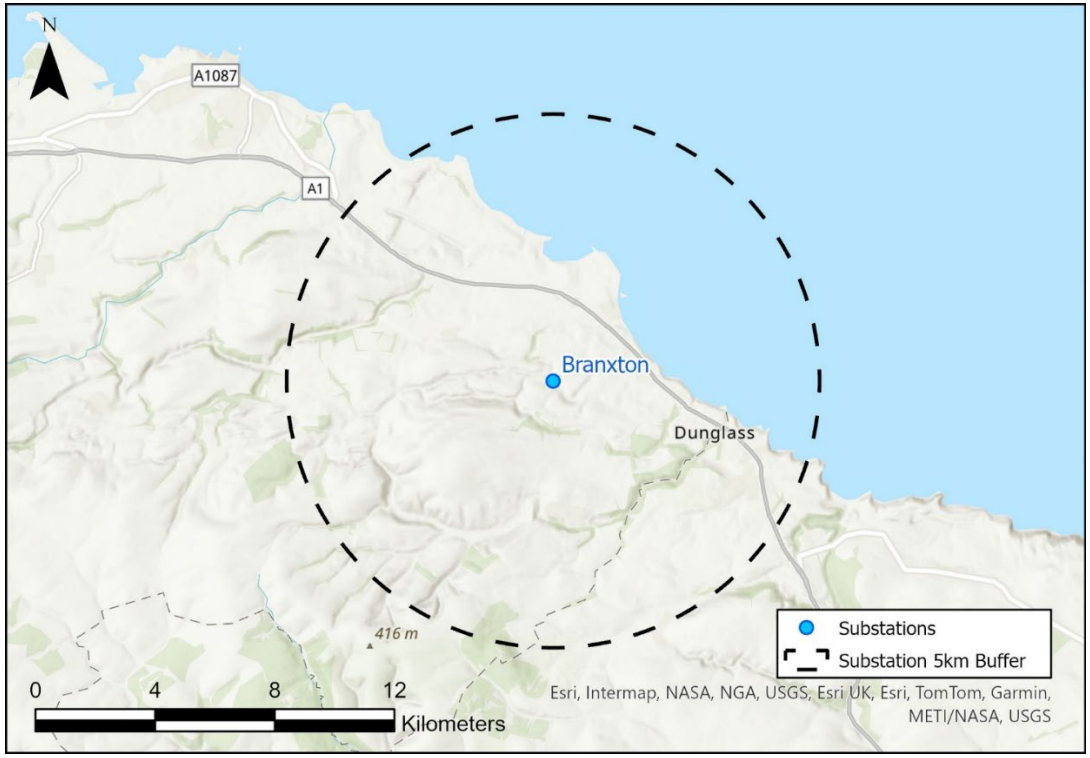


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SAC, namely Coedwigoedd Dyffryn Elwy / Elwy Valley Woods SAC located in the south of Bodelwyddan. There is one SSSI, namely Coedydd ac Ogofau Elwy a Meirchion SSSI in the south. There are areas of ancient woodlands scattered across Bodelwyddan. The SAC, SSSI, and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas are mainly located in the north (Rhuddlan, Bodelwyddan and Saint Asaph), as well as some smaller villages located throughout. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are upland areas within the south-west of Bodelwyddan. There are moderately sloping areas across Bodelwyddan, concentrated in the south-west, and steeply sloping land along the River Elwy. The agricultural land is a mixture of Class 1 (Excellent Quality Agricultural Land), Class 2 (Good Quality Agricultural Land), Class 3a (Good to Moderate Quality Agricultural Land) and Class 3b (Moderate Quality Agricultural Land), Class 4 (Poor Quality Agricultural Land) and Class 5 (Very Poor Quality Agricultural Land). Other areas within the study area are Urban and Non-Agricultural Land. There is potential to avoid the areas of prime agricultural land within the 5km buffer area, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water There are rivers and lakes located throughout Bodelwyddan, the most significant of which are the River Clwyd and River Elwy. There are a number of national flood zones located along the rivers within Bodelwyddan. An area benefitting from flood defences is located in the north. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. There is potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas are mainly located in the north (Rhuddlan, Bodelwyddan and Saint Asaph), as well as some smaller villages located throughout. There is an extensive road network throughout the area comprising A, B, minor, local, primary and restricted roads. There is a military area, Police Helipad, located in the north. There is a range of electrical transmission infrastructure within the surrounding area, including the Bodelwyddan 400kV substation, the St Asaph 132kV substation and the Burbo Bank Offshore Wind Farm 220kV substation. There are overhead lines located from east to west connecting to the substations at Bodelwyddan. The urban areas, roads, military area and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. There is potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are five Parks and Gardens, three in the west, one in the south and one in the south-east. There are 291 listed buildings in the study area located throughout Bodelwyddan. There are also 17 scheduled monuments within Bodelwyddan. These Parks and Gardens, listed buildings, and scheduled monuments	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. There is potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity The urban areas are mainly located in the north (Rhuddlan, Bodelwyddan and Saint Asaph), as well as some smaller villages located throughout. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
Given that Bodelwyddan requires one Developer AC Substation, and no other developments within the Preferred Option, there is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area.				

Branxton Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_E1a	1 DC Developer Converter Stations	Yes – HNDFUE ScotWind
Cedar	1 DC Developer Converter Station	Yes – HNDFUE INTOG
SW_E1c_1	1 DC Developer Converter Station	No - HNDFUE
PA_2	1 DC Developer Converter Station	No – HND1

Overview of Interface Area


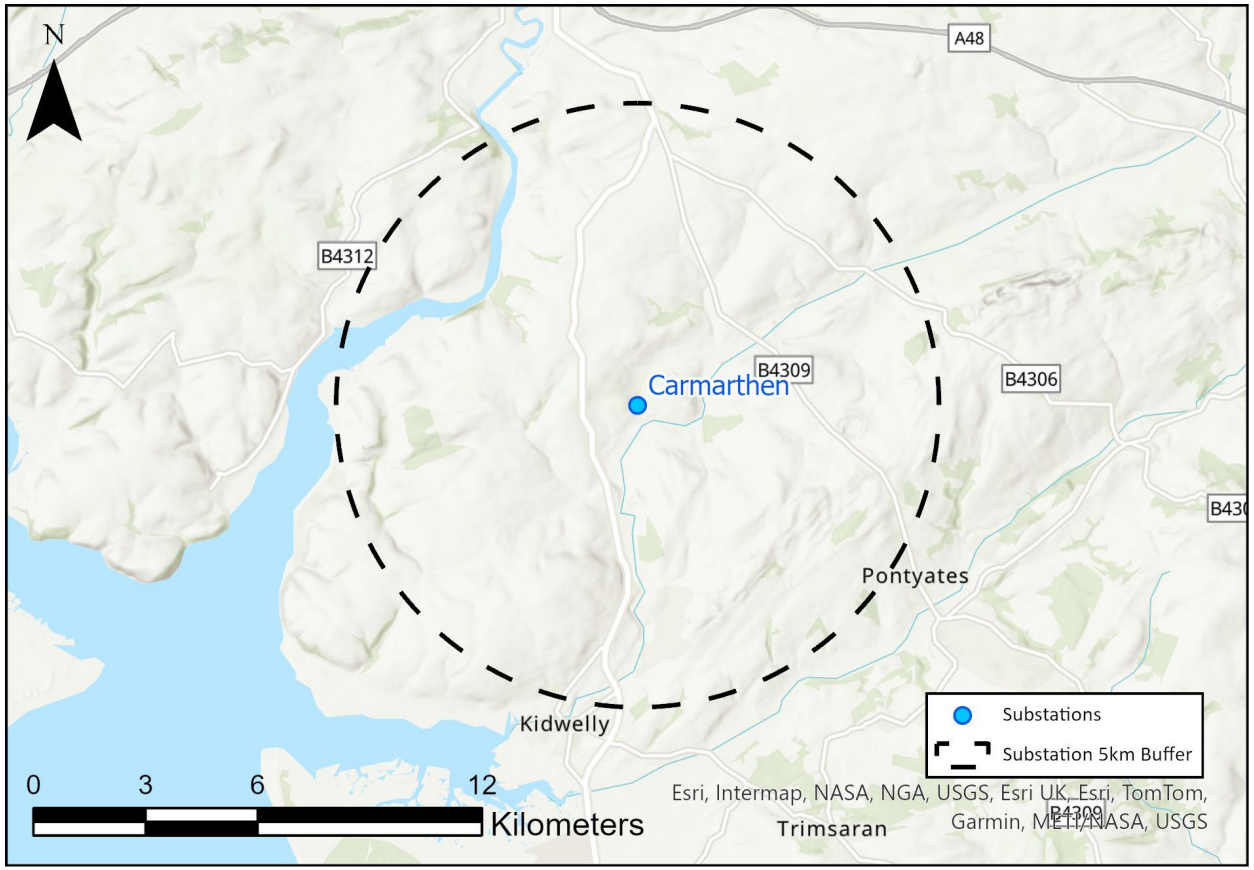
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are three SSSIs located in the 5km buffer area, namely Barn Ness Coast SSSI located along the coast in the north, Pease Bay Coast SSSI located along the coast in the east, and Lammermuir Deans SSSI located in the south-west. There are areas of ancient woodland scattered throughout the 5km buffer area. Additionally, the Outer Firth of Forth and St. Andrews Bay Complex SPA is located offshore in the north-east and lies adjacent to the coastline. The SSSIs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Population and Human Health There are no major settlements or major urban settlements within the 5km buffer area. There is potential for indirect negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are three SSSIs within the 5km buffer area (Barn Ness Coast SSSI, Pease Bay Coast SSSI and Lammermuir Deans SSSI) which are partially designated for Geological features. There are landfill sites located within the 5km buffer area. There is an upland area located within the south-west of the 5km buffer area. There are areas of moderately sloping land located in the study area, predominantly across the west and south, surrounding the area of upland. The agricultural land is predominantly Grade 3.1 (Good Quality Agricultural Land) with areas of Grade 2 (Very Good Quality Agricultural Land) in the north-west and east, Grade 4 (Poor Quality Agricultural Land) in the north-west and south, and Grade 5 (Very Poor-Quality Agricultural Land) in the south-west. The SSSIs, landfill sites and prime agricultural land are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. However, the avoidance of the prime agricultural land would require any infrastructure to be developed within an upland area. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the Branxton study area, including the Dunglass Burn, Oldhamstocks Burn Bilsdean Burn, Thornton Burn and Dry Burn. There are National Flood Zones located along these river channels, as well as their tributaries. A National Flood Zone is also located along the coast in the north-east. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new	-1	0/+2	0/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.				
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There is an extensive road network throughout the area comprising A roads, primary, minor, local and restricted roads. The East Coast Main Line railway runs across the study area from north-west to south-east. There is a range of electrical transmission infrastructure within the study area, including 12 400kV overhead lines, six 132kV overhead lines and associated transmission poles. The roads, railway line and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for indirect short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	0/+2	0/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 78 listed buildings in the study area, which are predominantly concentrated in Innerwick, Oldhamstocks and Cockburnspath. There are also 31 scheduled monuments in the study area, which are mainly located across the centre and west. The Dunglass Garden and Designed Landscape is located in the south-east. Two battlefields associated with the Battle of Dunbar I and Battle of Dunbar II, respectively, are located in the north-west. These listed buildings, scheduled monuments, Designed Landscape and Garden, and battlefields can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity A short section of the Southern Upland Way National Trail is located within the south-east of the 5km buffer area. The National Trail is within the study area but can be avoided, avoiding the potential for	-1	-1	-1	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HNDFUE Developments within the Interface Area. Branxton requires one Developer Converter Stations within the Preferred Option for HNDFUE ScotWind, as well as one Developer Converter Station within the Preferred Option for HNDFUE INTOG. An additional two TO Converter Stations are also required at Branxton within the Preferred Option. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SPA, SSSIs and areas of ancient woodlands present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use there is potential for increased indirect negative effects on areas of prime agricultural land and geologically designated SSSIs within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the River Deer, the River Tamar, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views, particularly in relation to the National Trail, during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Carmarthen Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
PDA 1	1 Developer Substation	Yes – HND Celtic Sea
Overview of Interface Area		



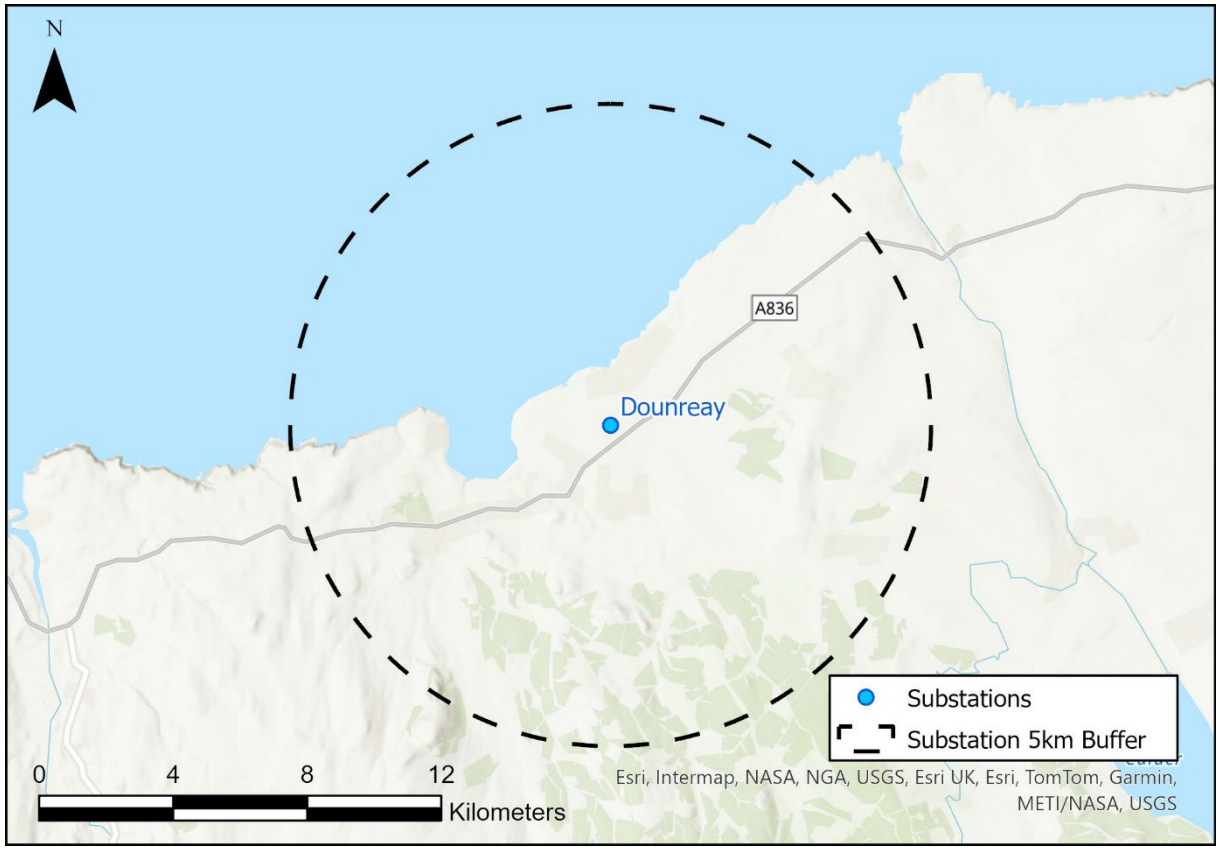
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SAC, namely Carmarthen Bay and Estuaries SAC, associated with the Taf Estuary and River Towy in the north-west of Carmarthen. There are NRW habitats which are highly sensitive to cabling located within the Taf Estuary/ the River Towy. These include the estuary itself, mudflats and sandflats not covered by seawater at low tide and Atlantic Salt Meadows. There are four SSSIs, namely Aber Taf/Taf Estuary SSSI, Coed Gwempa SSSI, Coedydd Capel Dyddgen SSSI, Cwm Clydach and Cydweli SSSI, located within Carmarthen, encompassing the Taf Estuary as well as areas in the east and south-east. The Carmarthen Bay IBA is located in the west, encompassing the lower sections of the Taf Estuary. There are areas of ancient woodlands scattered across Carmarthen. The SAC, SSSIs, IBA, NRW habitats and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-2	-2	-2	Direct & Indirect
Population and Human Health The urban areas of Kidwelly and Pontyates are located in the south and south-west, respectively. The settlements/urban areas of Kidwelly and Pontyates are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are three SSSIs designated for geology/geomorphology, namely Aber Taf/Taf Estuary SSSI, Coed Gwempa SSSI, and Smarts Quarry SSSI, located within the Carmarthen study area, encompassing the Taf Estuary as well as areas in the east and south-east. There are large areas of moderately sloping land located throughout the study, as well as one small upland area. The agricultural land is predominately Class 3a (Good Quality Agricultural Land) and Class 3b (Moderate Quality Agricultural Land), while there are also areas of Class 2 (Very Good Quality Agricultural Land), Class 4 (Poor Quality Agricultural Land) and Class 5 (Very Poor Quality Agricultural Land). Other areas within the study area are Urban and Non-Agricultural Land. There is limited scope to avoid the areas of prime agricultural land within the 5km buffer area, as such, potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The SSSIs are within the 5km buffer area but can be avoided, avoiding the potential for significant direct	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.				
Water Rivers and lakes are located throughout the Carmarthen study area, the most significant of which are the surface waters of the Taf Estuary / River Towy in the north-west. There are National Flood Zones located along the Taf Estuary / River Towy and Gwendraeth Fach. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There is one military area within the Carmarthen study area, namely the Pembrey Sands Air Weapons Range (danger area), located in the south-west. There is an extensive road network throughout the area comprising A, B, minor, local and restricted roads. There is one multi-track railway line located along the Taf Estuary in the north-west. There is a range of electrical transmission infrastructure within the Carmarthen study area, including two 400kV OHLs running from the north-west to the east. The urban areas, roads, railways, military area and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from	-1/+1	-1/+2	-1/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.				
Cultural, Architectural and Archaeological Heritage There are 24 listed buildings in the study area, which are predominantly located in the south and east. There are also 17 scheduled monuments in the study area, which are mainly located across the south/south-east. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity The urban areas of Kidwelly and Pontyates are located in the south and south-west, respectively. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Carmarthen requires one Developer Substation within the Preferred Option. A TO Substation is also required at Carmarthen. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on SAC, SSSIs, IBA, NRW habitats and areas of ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the SSSIs and areas of good agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the Taf Estuary / River Towy, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Dounreay Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_N2	1 AC Substation	Yes – HNDFUE ScotWind
SW_N4	1 AC Substation	No – HND1
SW_N1	1 AC Substation	No – HND1
Overview of Interface Area		

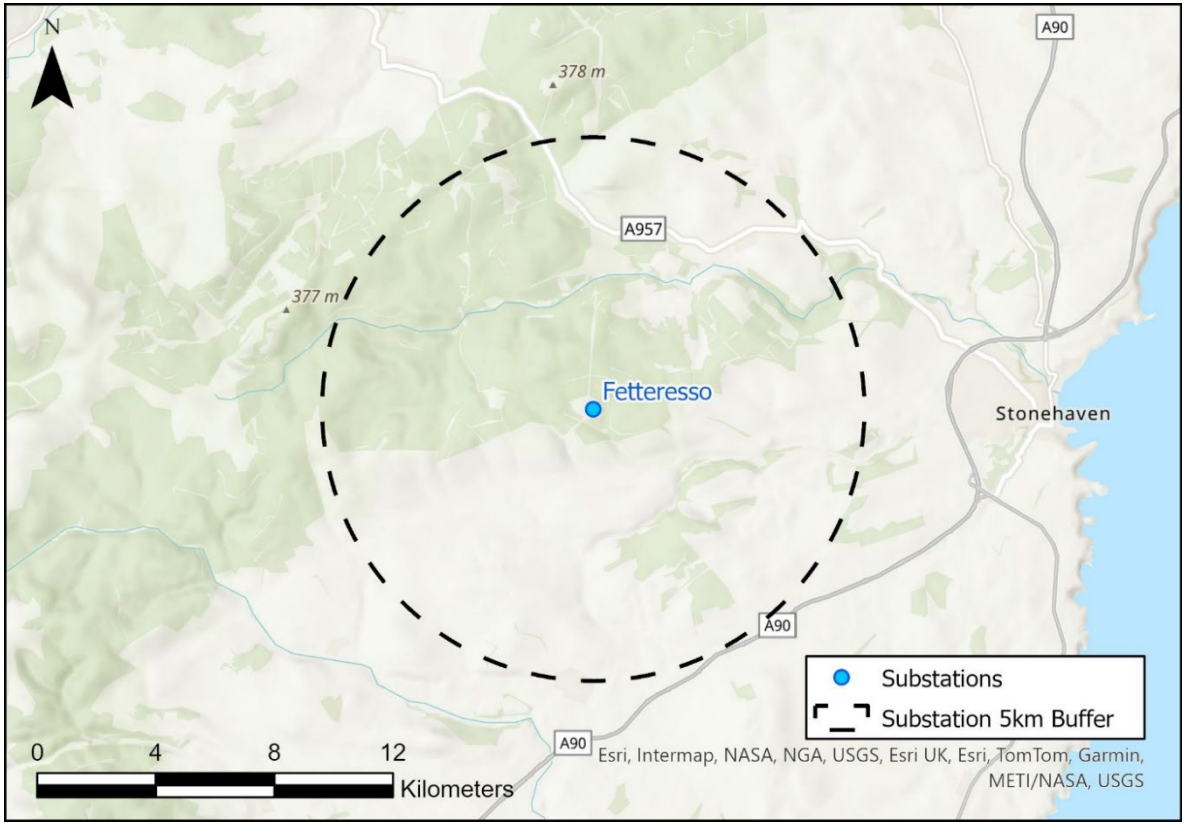


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SAC/SPA/Ramsar/IBA, namely Caithness and Sutherland Peatlands SAC/SPA/Ramsar/IBA, located partially within the north-west of Dounreay. The North Caithness Cliffs SPA is located predominantly offshore, with a small area onshore within the Dounreay area. There are three SSSIs within Dounreay, namely the East Halladale SSSI in the south-west, and the Red Point Coast SSSI and the Sandside Bay SSSI are in the west along the coastline. There is a small area of ancient woodland in the west. The Caithness Cliffs IBA is located to the west along the coastline. The SAC, SPAs, Ramsar, IBAs, SSSIs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There is an urban area to the north of Dounreay encompassing the Vulcan Naval Reactor Test Establishment, the Dounreay Nuclear Power Development Establishment and the Dounreay Fast Reactor. The settlements/urban areas within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use The Flow Country World Heritage Site is partially located within the south-west of Dounreay. There is one SSSI, namely Red Point Coast SSSI, which is designated for geological interest and is located in the west of Dounreay. There are areas of moderately sloping land located across Dounreay. The agricultural land is a mixture of Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), Class 5.1 (Land capable of use as improved grassland. Few problems with pasture establishment and maintenance and potential high yields), Class 5.3 (Land capable of use as improved grassland. Pasture deteriorates quickly), and Class 6.3 (Land capable of use as rough grazings with low quality plants). The World Heritage Site, SSSI, prime agricultural land and sloping land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Water Rivers and lakes are located throughout the Dounreay study area. There are National Flood Zones located along the Coastline and rivers. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There is an urban area to the north of Dounreay encompassing the Vulcan Naval Reactor Test Establishment, the Dounreay Nuclear Power Development Establishment and the Dounreay Fast Reactor. There is a road network throughout the area comprising A, minor, local and restricted roads across Dounreay. There is electrical transmission infrastructure within the surrounding area, including two 275kV overhead lines connecting into Dounreay 275kV Substation. The urban areas, roads, and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The Flow Country World Heritage Site is partially located within the south-west of Dounreay. There are 22 listed buildings in the study area. There are also 14 scheduled monuments. These listed buildings, scheduled monuments and world heritage site can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity There is an urban area to the north of Dounreay encompassing the Vulcan Naval Reactor Test Establishment, the Dounreay Nuclear Power Development Establishment and the Dounreay Fast Reactor. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area with existing infrastructure. Dounreay requires one Developer AC Substation within the Preferred Option. The combination of this development with existing infrastructure has the potential for cumulative effects on SEA topics. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. For Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Fetteresso Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
Aspen	1 Developer Converter Station	Yes – INTOG
Cenos	1 Developer Converter Station	No – INTOG
Cedar	1 Developer Converter Station	No – INTOG
SW_E1a	1 Developer Converter Station	No - HND1
Overview of Interface Area		

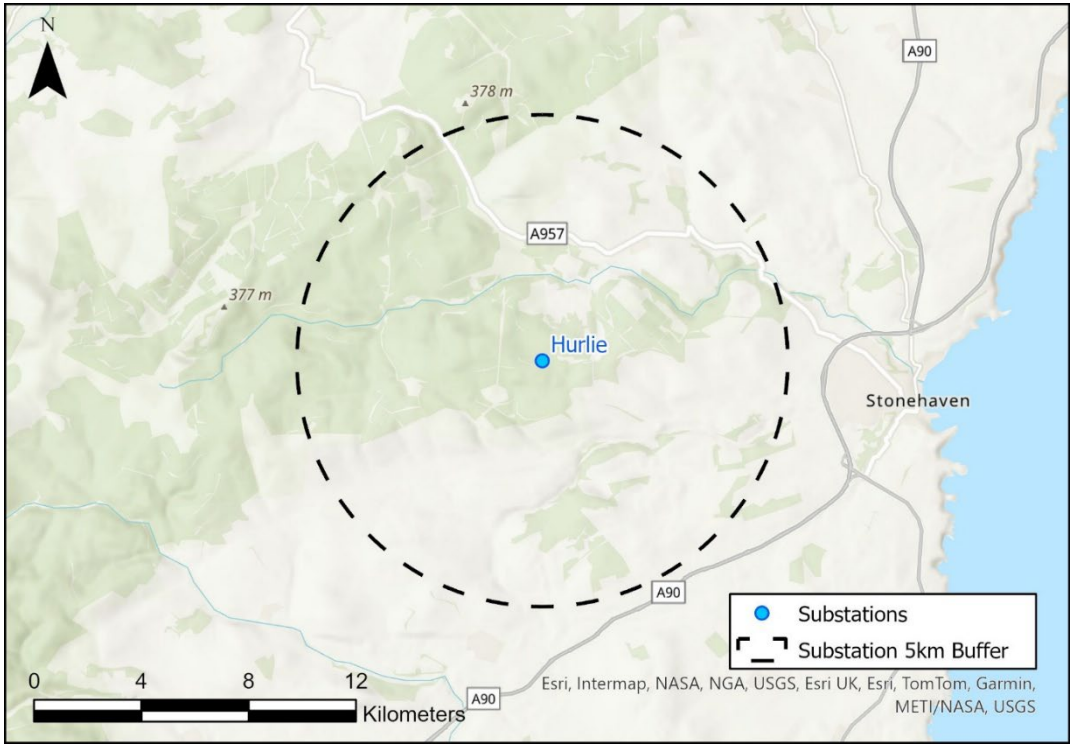


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are areas of ancient woodland located across Fetteresso. The areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are no urban areas in the vicinity of Fetteresso. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are small areas of steeply sloping land throughout Fetteresso, there are significant areas of moderately sloping land across Fetteresso. There are large areas of upland located in the north and west. The agricultural land is a mixture of Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), Class 5.1 (Land capable of use as improved grassland. Few problems with pasture establishment and maintenance and potential high yields), Class 5.2 (Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain), Class 5.3 (Land capable of use as improved grassland. Pasture deteriorates quickly) and Class 6.2 (Land capable of use as rough grazings with moderate quality plants). The sloping land, uplands and prime agricultural land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout Fetteresso, including Carron Water and Cowie Water. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There is a road network throughout the area comprising A, minor, local, and restricted roads across Fetteresso. There is a railway line located in the south of Fetteresso along Carron Water. There is electrical transmission infrastructure within the surrounding area, including two 275kV overhead lines and one 132kV overhead line. The Fetteresso 275kV Substation is located within the area. The roads, railway and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 16 listed buildings in the study area, predominantly located within the urban areas. There are also six scheduled monuments. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity	-1	-1	-1	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				
Cumulative and in combination issues				
Fetteresso requires a Developer Converter Station within the Preferred Option. The combination of this development with existing infrastructure has the potential for cumulative effects on SEA topics. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. For Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Hurlie Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_E3	1 AC Developer Substation	Yes – HNDFUE
SW_E1a	1 Developer DCConvertor Station	Yes – HND1
SW_E2a_1	2 AC and 2 DC Converter Stations.	No – HNDFUE
SW_E2a_2	AC and 2 DC Converter Stations.	No - HNDFUE
Overview of Interface Area		

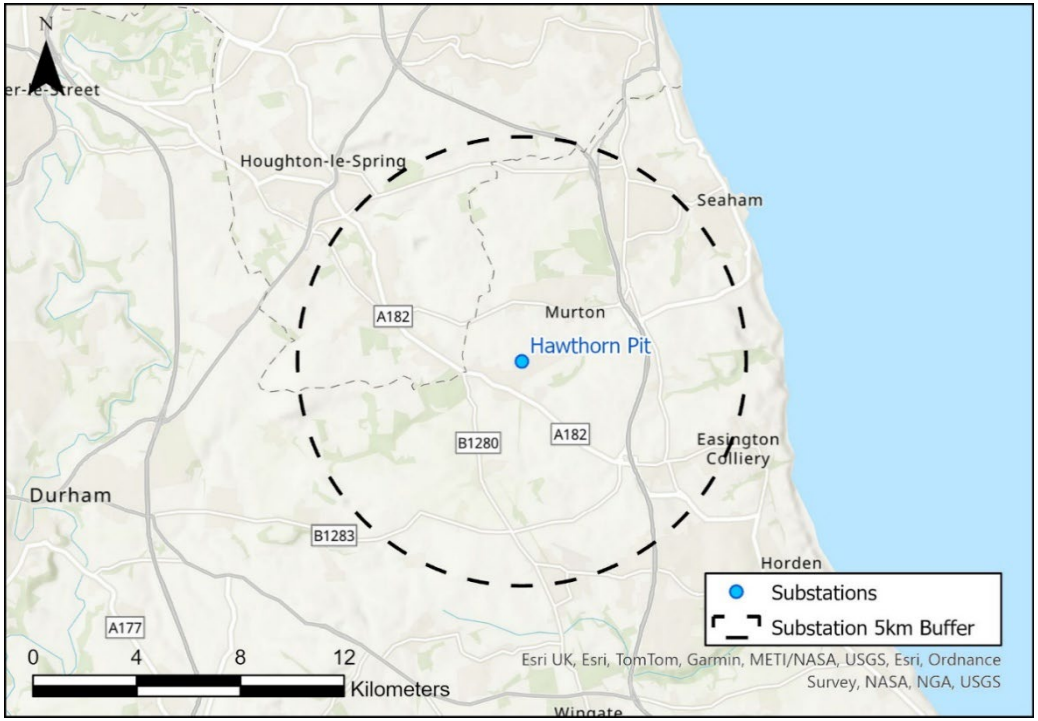


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are areas of ancient woodland located in the north, east and south of Hurlie. The areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are no urban areas in the vicinity of Hurlie. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are small areas of steeply sloping land throughout Hurlie, and there are significant areas of moderately sloping land across Hurlie. There are large areas of upland located in the north and west. The agricultural land is a mixture of Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), Class 5.1 (Land capable of use as improved grassland. Few problems with pasture establishment and maintenance and potential high yields), Class 5.2 (Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain), Class 5.3 (Land capable of use as improved grassland. Pasture deteriorates quickly) and Class 6.2 (Land capable of use as rough grazings with moderate quality plants). Other areas within the study area are Urban. The sloping land, uplands and prime agricultural land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout Hurlie, including Carron Water and Cowie Water. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.				
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There is a road network throughout the area comprising A, minor, local, and restricted roads across Hurlie. There is a railway line located in the south of Hurlie along Carron Water. There is electrical transmission infrastructure within the surrounding area, including two 275kV overhead lines and one 132kV overhead line. The Fetteresso 275kV Substation is located in the west. The roads, railway and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 13 listed buildings in the study area, predominantly located within the urban areas. There are also eight scheduled monuments. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Hurlie requires 1 AC Developer Substation and 1 DC Developer Converter Stations within the Preferred Option. New TO Substation 4 Bays are also required at Hurlie. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the areas of ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Hawthorn Pit Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_E1a	1 DC Developer Converter Station	Yes - HND 1
PA_1	1 Developer Converter Station	No – HND 1
SW_E1a	1 DC Developer Converter Stations	No – HNDFUE
SW_E1c_1	1 DC Developer Converter Stations	No – HNDFUE
Cenos	1 Developer Converter Station	No - INTOG

Overview of Interface Area


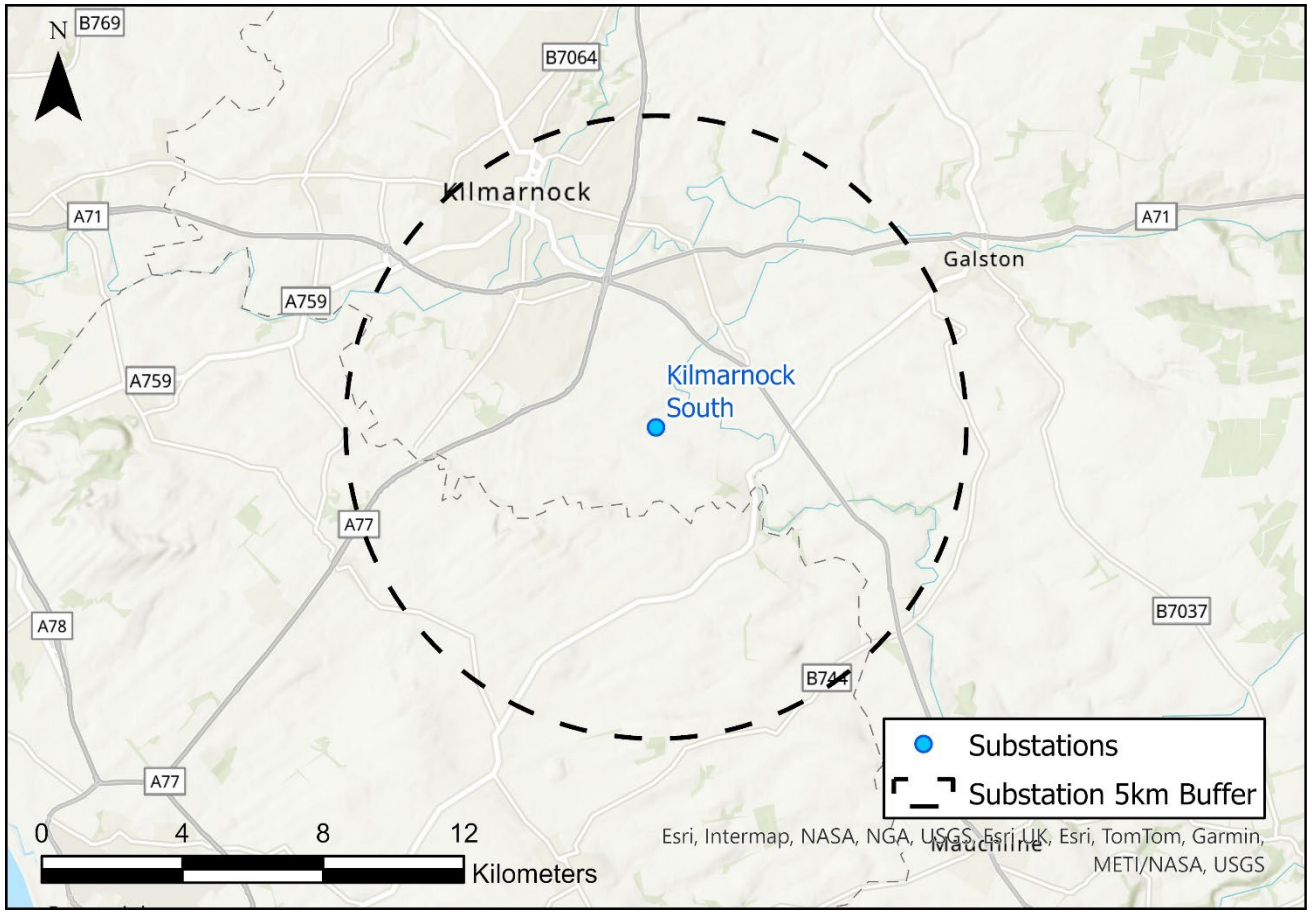
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna The Durham Coast SAC is located along the coast to the east of Hawthorn Pit. There are 13 SSSIs, namely Crime Rigg Quarry SSSI, Dabble Bank SSSI, Eppleton Grassland SSSI, Hawthorn Dene SSSI, Hawthorn Quarry SSSI, Hesledon Moor East SSSI, Hesledon Moor West SSSI, Hetton Bogs SSSI, High Moosley SSSI, Moorsley Banks SSSI, Pig Hill SSSI, Stony Cut Cold Hesledon SSSI, and Tuthill Quarry SSSI. There are areas of ancient woodland located within Hawthorn Pit. The SAC, areas of ancient woodland and the SSSIs are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Population and Human Health There are urban areas including Seaham in the north-east, Murton in the north, Hetton-le-Hole in the north-west, and Peterlee and Easington in the south-east. There are smaller urban areas located throughout. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are seven SSSIs, namely Crime Rigg Quarry SSSI, Hawthorn Dene SSSI, Hawthorn Quarry SSSI, High Moosley SSSI, Pig Hill SSSI, Stony Cut Cold Hesledon SSSI, and Tuthill Quarry SSSI, designated for their geological interest. There are 35 landfill sites located across Hawthorn Pit. There are areas of moderately sloping land located across Hawthorn Pit. The agricultural land is a Grade 3 (good to moderate quality agricultural land). There are areas of non-agricultural land and urban areas. The areas of sloping land, prime agricultural land and the SSSIs are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout the Hawthorn Pit study area. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors	-1	0/+2	0/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.				
Material Assets and Infrastructure There are urban areas including Seaham in the north-east, Murton in the north, Hetton-le-Hole in the north-west, and Peterlee and Easington in the south-east. There is a road network throughout the area comprising A roads, B Roads, minor, local and restricted roads across Hawthorn Pit. There is electrical transmission infrastructure within the surrounding area, including a 400/275kV overhead line and two 275kV overhead lines. The Eastern Green Link 1 cable is located within the area. The Hawthorn Pit 400kV substation is located in the area, and the Hawthorn Pit 525kV DC converter station is under construction. The urban areas, roads and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 51 listed buildings in the study area. There are five scheduled monuments within the 5km study area. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity There are urban areas including Seaham in the north-east, Murton in the north, Hetton-le-Hole in the north-west, and Peterlee and Easington in the south-east. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Hawthorn Pit requires one Developer DC Converter Station within the Preferred Option. The combination of this development has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SAC, SSSIs and ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the SSSIs, landfills and prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Kilmarnock South Onshore Interface Area		
Start Point	**Requirements**	**In Preferred Option (Y/N)**
SW_W1	1 DC Converter Station	Y - HND
Overview of Interface Area		



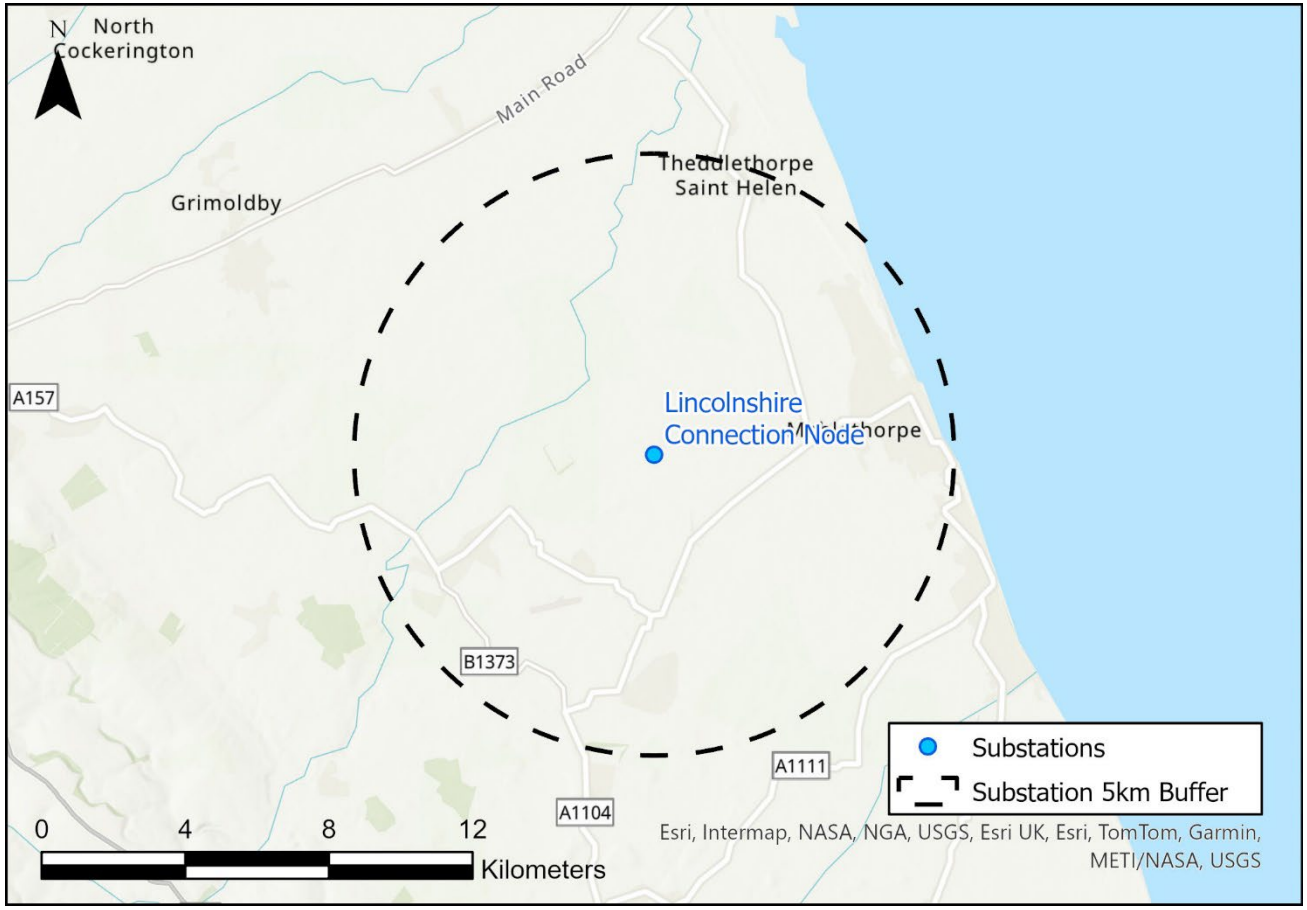
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are areas of ancient woodland located throughout Kilmarnock South. The areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas are mainly located in the north (Kilmarnock), as well as some smaller villages located throughout. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are scattered areas of moderately sloping land located throughout Kilmarnock South, with small, scattered areas of steeply sloping land. The agricultural land is predominately Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), with areas of Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range), Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops) and Class 5.3 (Land capable of use as improved grassland. Other areas are urban). There is potential to avoid the areas of prime agricultural land within the 5km buffer area, avoiding the potential for significant direct effects. There may There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water There are rivers and lakes located throughout Kilmarnock South, the most significant of which is the River Irvine and its tributaries. There are a number of national flood zones located throughout Kilmarnock South and along the rivers. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. There is potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. There is potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. There is potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure, reducing the requirement for the burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas are mainly located in the north (Kilmarnock). There is an extensive road network throughout the area comprising A, B, minor, local, primary and restricted roads. There is a railway line within the east of Kilmarnock South. There is a range of electrical transmission infrastructure within the surrounding area, including the Kilmarnock South 400kV substation and the Kilmarnock Town 275kV substation. There are 400kV, 275kV, 132kV and 33kV overhead lines connecting into these substations. The urban areas, roads, railway line and major onshore utilities are within the study area, but can be avoided, avoiding the potential for significant direct effects. There is potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+1	-1/+1	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are two Garden and Designed Landscapes, one located in the north-west and one located in the south-east. There are 256 listed buildings in the study area. There are also four scheduled monuments. These Gardens and Designed Landscapes, listed buildings, and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. There is potential for short-term, indirect negative effects	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity The urban areas are mainly located in the north (Kilmarnock). The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
Given that Kilmarnock South requires one DC Converter Station, and no other HND developments within the Preferred Option, there is limited potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area.				

LCN Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_E1c_1	1 Developer DC Converter Station	Yes – HNDFUE
SW_E1a	1 Developer DC Converter Station	Yes – HND1
SW_E1c_2	1 Developer DC Converter Stations	No – HNDFUE ScotWind
SW_E1a	1 Developer DC Converter Stations	No – HNDFUE ScotWind
R4_2	1 Developer Converter Station	No - HND1
R4_3	1 Developer Converter Station	No - HND1

Overview of Interface Area

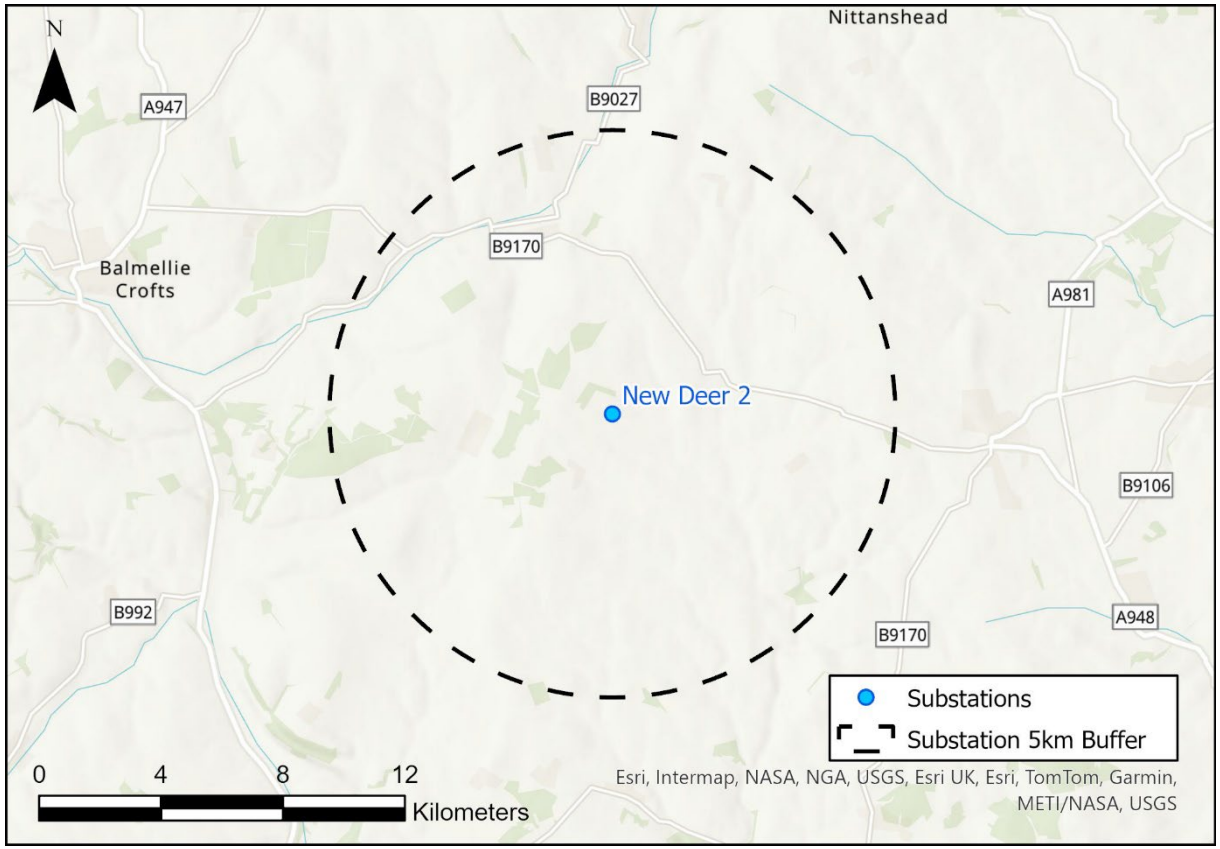


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SSSI located along the coast in the north-east, namely Saltfleetby – Theddlethorpe Dunes SSSI. The Humber Estuary Ramsar Site/SPA/IBA, the Saltfleetby-Teddlethrope Dunes and Gibraltar Point SAC, and the Lincolnshire Coronation Coast National Nature Reserve are also located along the coast in the north-east of the 5km buffer area, whilst the Greater Wash SPA is located along the coast in east. There is an area of ancient woodland located in the south-west. The SSSI, SPAs, SAC, Ramsar Site, IBA, National Nature Reserve and area of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas of Mablethorpe and Maltby-Le-Marsh are located in the east and south, respectively. The settlement/urban areas of Mablethorpe and Maltby-Le-Marsh are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for indirect negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	1/+1	-1/+1	Indirect / Indirect
Geology, Soils and Land Use There are four landfill sites located in the study area, two are located in the east, one in the north and one is located in the west. The agricultural land is predominantly Grade 3 (Good to Moderate Quality Agricultural Land) with an area of Grade 2 (Very Good Quality Agricultural Land) across the south and smaller areas of non-agricultural land around airfields in the south-west and urban land at Mablethorpe in the east. There is limited scope to avoid the areas of prime agricultural land within the 5km buffer area, as such potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The landfills are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the LCN study area, the most significant of which are the surface waters of the Great Eau river across the west. There are National Flood Zones which encompass the east, centre, north and south-east of the 5km buffer area, whilst National Flood	-2	-2	-2	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Zones are located along the Great Eau river and its tributaries. The rivers and lakes within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction. However, it may be difficult to completely avoid the National Flood Zones within the 5km buffer area, as such potential for moderate effects on W cannot be avoided within the interface 5km buffer area.				
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	-1/+1	-1/+1	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	-1/+1	-1/+1	Direct / Indirect
Material Assets and Infrastructure The urban areas of Mablethorpe and Maltby-Le-Marsh are located in the east and south, respectively. There is an extensive road network throughout the area comprising A roads and B roads. There is one military bunker located in the north-east. The urban areas, roads and military area are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for indirect short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+1	-1/+1	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 36 listed buildings in the study area, which are predominantly concentrated in the south/south-west. There are also three scheduled monuments in the study area, which are located in the south and centre. These listed buildings and scheduled monuments can be avoided, avoiding	-1	-1	-1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity The urban areas of Mablethorpe and Maltby-Le-Marsh are located in the east and south, respectively. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. LCN requires two Developer DC Converter Stations within the Preferred Option. A Transmission Owner (TO) AC Substation and a TO DC Converter Station are also required at LCN. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SSSI, SPAs, SAC, Ramsar Site, IBA, National Nature Reserve and area of ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the landfills and direct negative effects areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the Great Eau, its tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased, direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

New Deer 2 Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_NE3	1 AC Developer substation	Yes – HNDFUE
SW_NE4	1 AC Developer substation	No - HNDFUE
Overview of Interface Area		

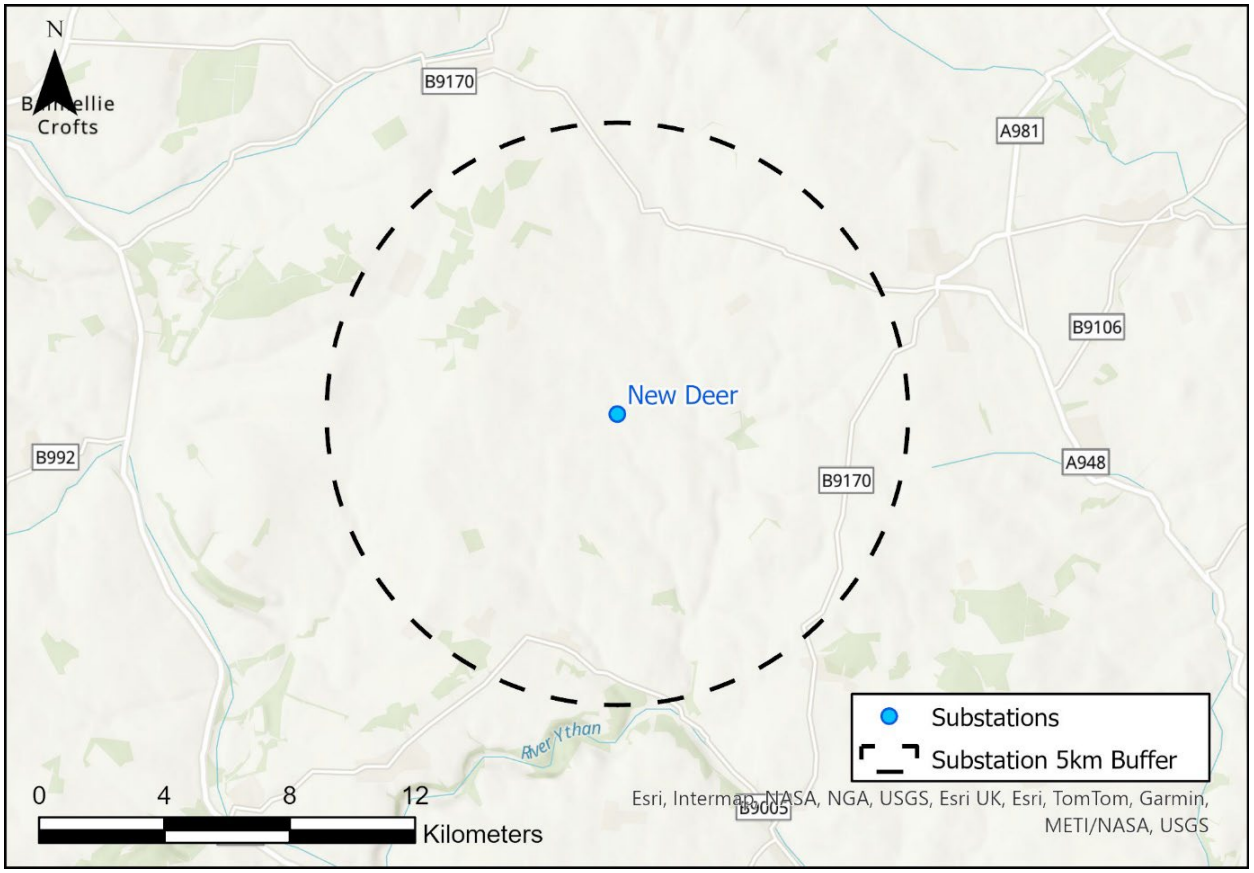


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are areas of ancient woodland located within the vicinity of New Deer 2. The areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There is an urban area to the north of New Deer 2 at Cuminestown. The settlements/urban areas within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from facilitation of new renewable energy infrastructure.	-1	-1/+1	-1/+1	Indirect / Indirect
Geology, Soils and Land Use There are areas of moderately sloping land located across New Deer 2. The agricultural land is a mixture of Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common) and Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal). The areas of sloping land and areas of prime agricultural land are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout the New Deer 2 study area. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new	-1	0/+1	0/+1	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.				
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+1	0/+1	Direct / Indirect
Material Assets and Infrastructure There is an urban area to the north of New Deer 2 at Cuminestown. There is a road network throughout the area comprising B, minor, local, primary and restricted roads across New Deer 2. There is electrical transmission infrastructure within the surrounding area, including a 400kV overhead line connecting into the New Deer 400kV substation. The Moray East Wind Farm Export Cable is located within the area. The urban areas, roads and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+1	-1/+1	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 11 listed buildings in the study area. The Hatton Castle Garden and Designed Landscape is located partially within the New Deer 2 area. These listed buildings and Hatton Castle can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity There is an urban area to the north of New Deer 2 at Cuminestown. The urban area is within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. New Deer 2 requires 1 AC Developer substations within the Preferred Option. One AC TO substation is also required at New Deer 2. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the areas of ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers and their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

New Deer Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_NE4	2 AC Developer Substations	Yes - HNDFUE
Overview of Interface Area		

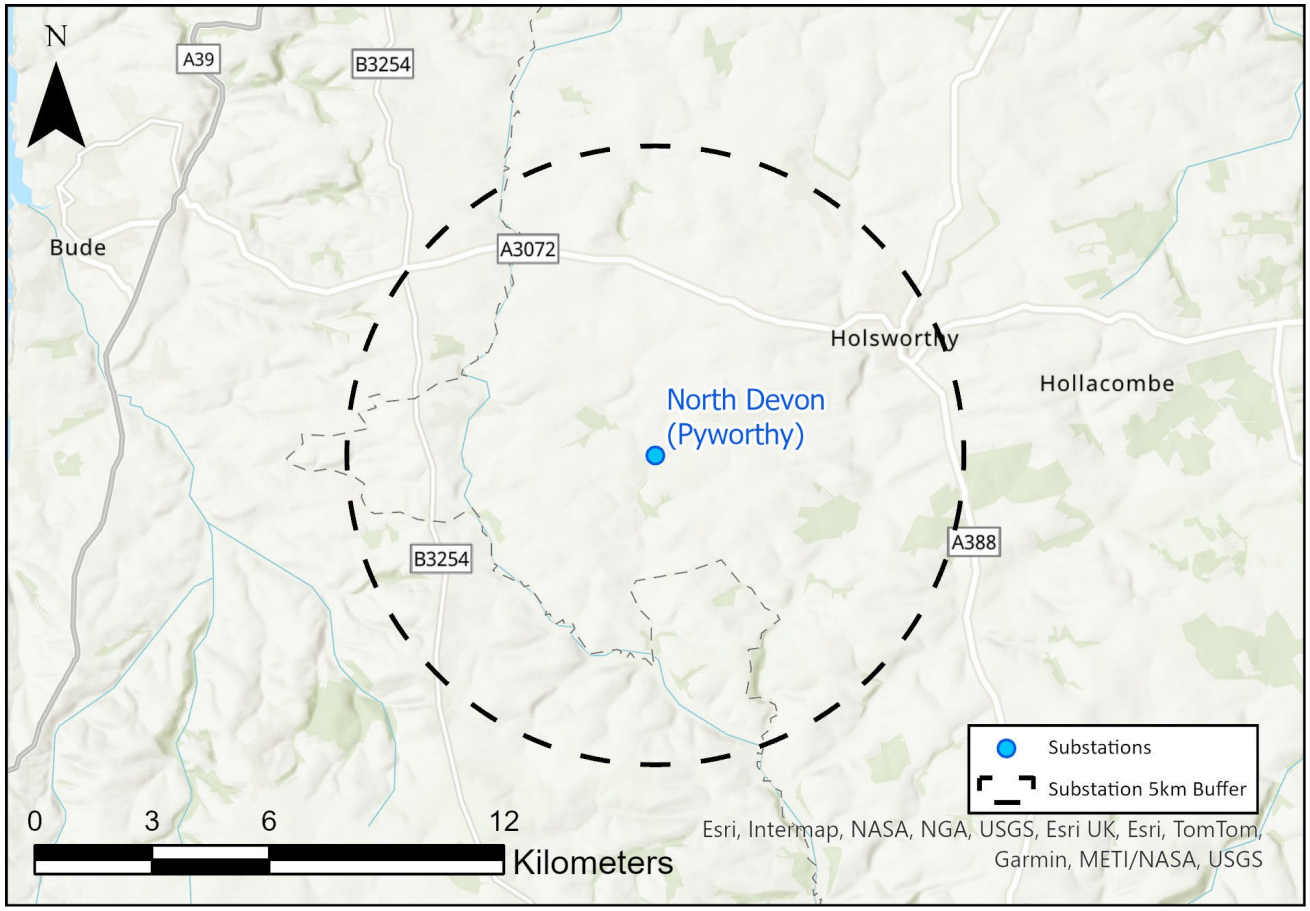


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are areas of ancient woodland located within the vicinity of New Deer. The areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+1	-1/+1	Indirect / Indirect
Geology, Soils and Land Use There are areas of moderately sloping land located across New Deer. The agricultural land is a mixture of Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal) and Class 6.1 (Land capable of use as rough grazings with a high proportion of palatable plants). The areas of sloping land and prime agricultural land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout the New Deer study area. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new	-1	0/+1	0/+1	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.				
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+1	0/+1	Direct / Indirect
Material Assets and Infrastructure There is a road network throughout the area comprising B, minor, local, primary and restricted roads across New Deer 2. There is electrical transmission infrastructure within the surrounding area, including a 400kV overhead line connecting into the New Deer 400kV substation. The Moray East Wind Farm Export Cable is located within the area. The roads and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+1	-1/+1	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are two listed buildings in the study area. These listed buildings can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. New Deer requires 2 AC Developer substations within the Preferred Option. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
designated sites in the short to long-term, as well as the potential for increased indirect effects on the areas of ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use there is potential for increased indirect negative effects on the areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers and their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

North Devon Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
PDA 3	1 Developer Substation	Yes – Celtic Sea
PDA 2	1-2 Developer Substation	No
Overview of Interface Area		

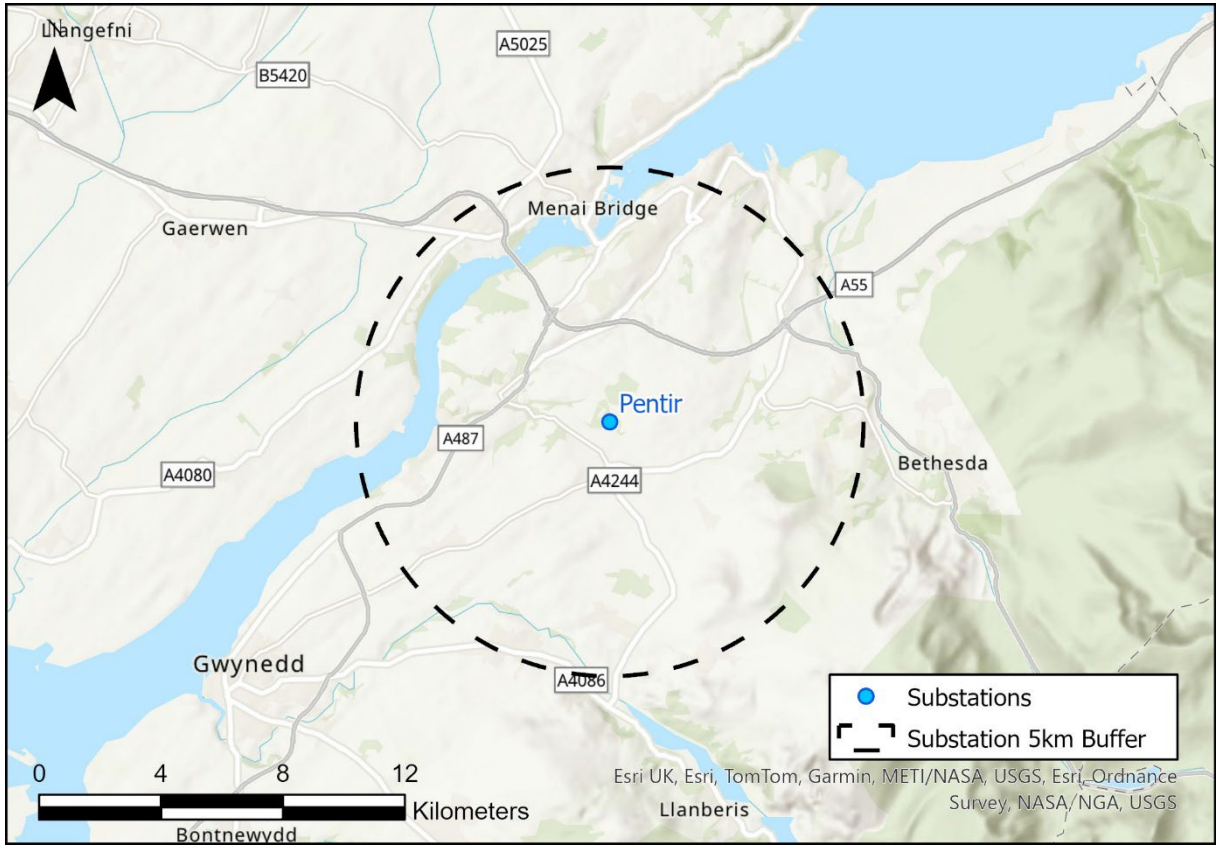


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are three SSSIs located in the north, namely Brendon and Vealand Fern SSSI, Kingford Fen SSSI and Small Brook SSSI. There are areas of ancient woodland located in the east. The SSSIs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban area of Holsworthy is located in the north-east. The settlement/urban area of Holsworthy is within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for indirect negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are four landfill sites located in the study area, three are located in the north-east, and one is located in the west. There are areas of moderately sloping land located in the study area, predominantly across the east, south and west. A small area of steeply sloping land is also located in the north-west. The agricultural land is predominantly Grade 4 (Poor Quality Agricultural Land), whilst there are areas of Grade 3 (Good to Moderate Quality Agricultural Land) scattered throughout the study area and smaller areas of Grade 5 (Very Poor Quality Agricultural Land) in the north, south and east. The moderately sloping land, landfills, and prime quality agricultural land are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout the North Devon study area, the most significant of which are the surface waters of the River Deer in the east and the River Tamar in the west. There are National Flood Zones located along the River Deer and the River Tamar, as well as their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban area of Holsworthy is located in the north-east. There is an extensive road network throughout the area comprising A roads, B roads, minor, local and restricted roads. There is a range of electrical transmission infrastructure within the North Devon study area, including one 400kV overhead line and associated transmission poles, running from north-east to south-west. The urban area, roads and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for indirect short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	0/+2	0/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 59 listed buildings in the study area, which are predominantly concentrated in Holsworthy. There are also eight scheduled monuments in the study area, which are mainly located across the south-east. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity The urban area of Holsworthy is located in the north-east. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. North Devon requires one Developer Substation within the Preferred Option and a new TO Substation. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SSSIs and areas of ancient woodlands present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the landfills and areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the River Deer, the River Tamar, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Pentir Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
Ballantrae Tee	1 Developer DC Converter Station	Yes – HND1
SW_W1	1 Developer Converter Station	No – HND1
Arnish	2 Transmission Owner (TO) DC Converter Stations	No - HNDFUE
Overview of Interface Area		



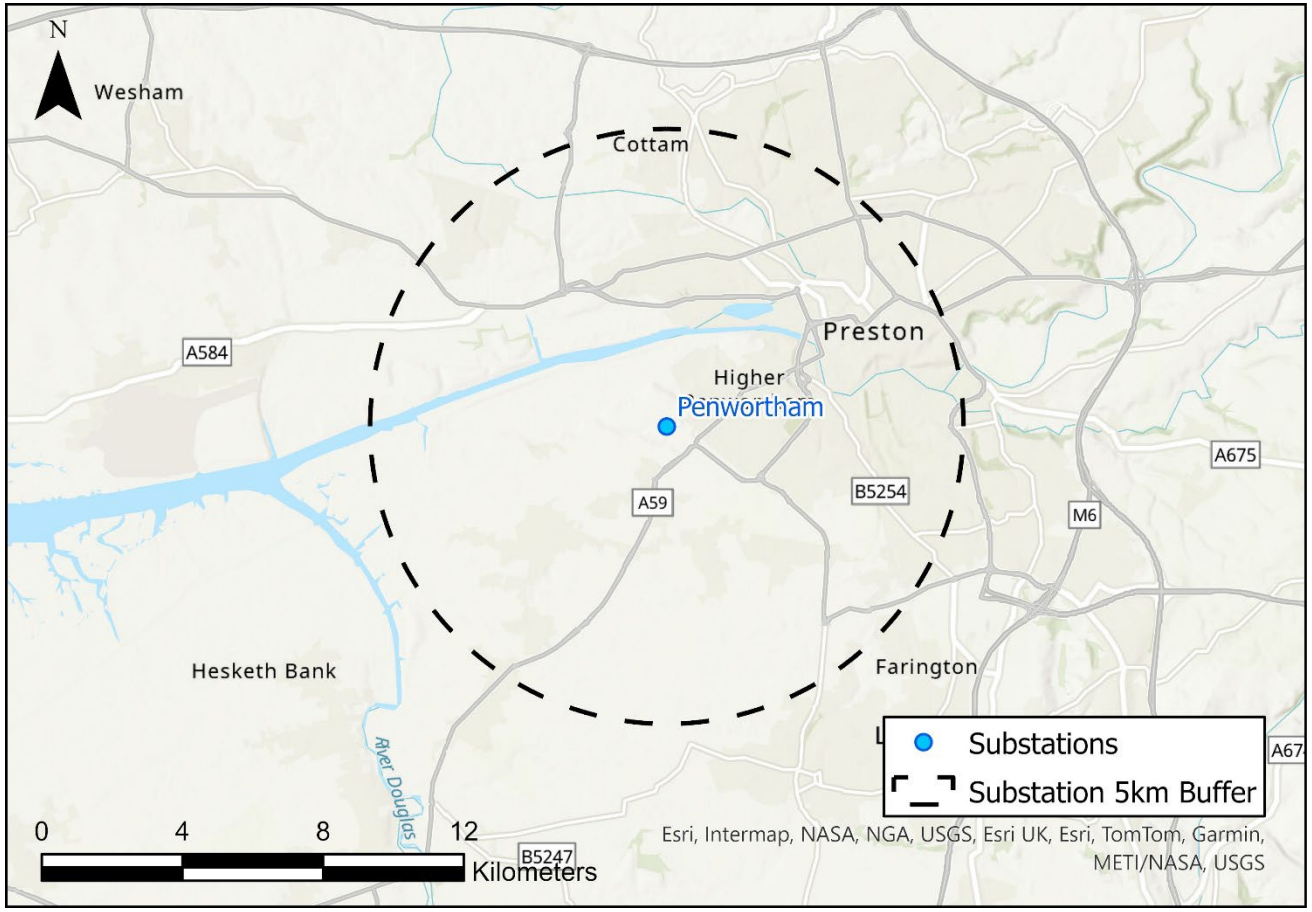
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are two SACs, namely Eyri / Snowdonia SAC located in the south-east of Pentir and the Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC located in the north-west. There are seven SSSIs, namely Afon Gwyrfai a Llyn Cwellyn SSSI in the south-east, Cadnant Dingle SSSI, Eithinog SSSI and Coedydd Afon Menai SSSI in the north, Caeau Tyddyn Dicwm SSSI and Moelyci a Chors Ty'n y Caeau SSSI in the east and Sgistau Glas Ynys Mon SSSI in the north-west. There are NRW habitats which are highly sensitive to cabling located in the Menai Strait in the north-west. These include intertidal under-boulder communities, mudflats and sandflats not covered by seawater at low tide, peat and clay exposures, reefs, sandbanks, seagrass beds, and tide-swept egg wrack communities. There are areas of ancient woodlands scattered across Pentir, mainly concentrated in the north. The SAC, SSSIs, NRW Key Sensitive Habitats and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas are mainly located in the north (Bangor), west (Bethel, Y Felinheli and Penisarwaun) and the east (Tregarth), as well as some smaller villages located throughout. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are four SSSIs designated for geology/geomorphology, namely Afon Gwyrfai a Llyn Cwellyn SSSI in the south-east, Eithinog SSSI and Coedydd Afon Menai SSSI in the north, and Sgistau Glas Ynys Mon SSSI in the north-west. There are two World Heritage Sites within Pentir, one located in the south-east and one in the east. There are upland areas within the south-east of Pentir. There are moderately sloping areas across Pentir, concentrated in the east, and steeply sloping land in the south-east, north and west. There is one landfill site located in the north. There are large areas of moderately sloping land located throughout the study, as well as one small upland area. The agricultural land is a mixture of Class 2 (Very Good Quality Agricultural Land), Class 3a (Good Quality Agricultural Land) and Class 3b (Moderate Quality Agricultural Land), while there are also areas of Class 4 (Poor Quality Agricultural Land) and Class 5 (Very Poor Quality Agricultural Land). Other areas within the study area are Urban and Non-Agricultural Land. There is limited	-2	-2	-2	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
scope to avoid the areas of prime agricultural land within the 5km buffer area, as such, potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The SSSIs, World Heritage Sites, Landfill sites, uplands and steeply sloping land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There may There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.				
Water There are rivers and lakes are located throughout Pentir, the most significant of which are the surface waters of the Menai Strait in the north-west. There are a number of national flood zones within Pentir associated with the Menai Strait and Afon Adda in the north-west, the Afon Cegan and Afon Ogwen rivers in the west and Afon Seiont in the south. An area benefiting from flood defences is located in the north-east. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas are mainly located in the north (Bangor), west (Bethel, Y Felinheli and Penisarwaun) and the east (Tregarth), as well as some smaller villages located throughout. There is an extensive road network throughout the area comprising A, B, minor, local and restricted roads. There is a railway line across the north of Pentir. There are two areas of port lands located in the north of Pentir, one situated in	-1/+1	-1/+2	-1/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Bangor and one at Porthaethwy / Menai Bridge. There is a range of electrical transmission infrastructure within the surrounding area, including the Pentir 132kV substation, the Pentir 400kV Substation, and the Penisarwaun 400kV Cable Compound in the south. There are overhead lines located across the south, north-west and north-east of the Pentir connecting to the substations at Pentir. The urban areas, roads, railways, and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.				
Cultural, Architectural and Archaeological Heritage There are two World Heritage Sites within Pentir, one located in the south-east and one in the east. There are also eight Parks and Gardens within the north-west of Pentir. There are 450 listed buildings in the study area, which are concentrated in Bangor and Porthaethwy / Menai Bridge in the north. There are also 38 scheduled monuments, which are mainly located across the south and east. These World Heritage Sites, Parks and Gardens, listed buildings, and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity There is one AONB located in the north-west, namely the Ynys Mon/Anglesey AONB. The urban areas Urban areas are mainly located in the north (Bangor), west (Bethel, Y Felinheli and Penisarwaun) and the east (Tregarth), as well as some smaller villages located throughout. The AONB and urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-2	-2	-2	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Pentir requires one Developer DC Converter Station within the Preferred Option. The combination of this development has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
designated sites in the short to long-term, as well as the potential for increased indirect effects on the The SAC, SSSIs, NRW Key Sensitive Habitats and areas of ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the SSSIs, landfills and prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Penwortham Onshore Interface Area		
Start Point	**Requirements**	**In Preferred Option (Y/N)**
R4_5	1 AC Substation	Y – HND1
R4_6	1 AC Substation	Y – HND1
Overview of Interface Area		

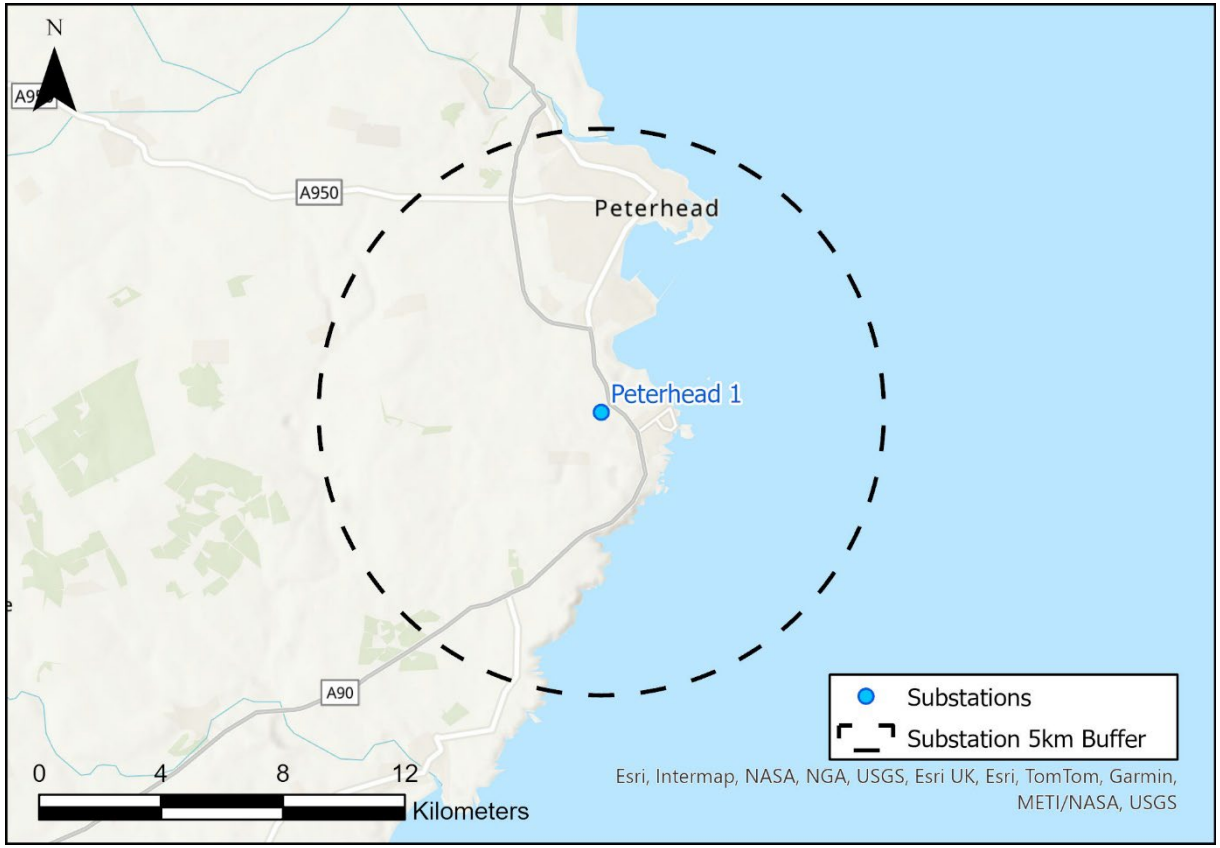


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna The Ribble and Alt Estuaries SPA / Ramsar / IBA, located in the west of Penwortham along the River Ribble. There are two SSSIs located in the west, namely Lytham Coastal Changes SSSI and Newton Marsh SSSI. There are small areas of ancient woodlands scattered located in the east of Penwortham. The SPA, Ramsar, IBA, SSSIs, and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas are mainly located in the north (Cottam), east (Preston and Higher Penwortham) and south (Hutton, Walmer Bridge). The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-2	-2/+2	-2/+2	Indirect / Indirect
Geology, Soils and Land Use There is one SSSI, namely Lytham Coastal Changes SSSI, designated for geological interest and is located in the west of Penwortham. There are landfills located throughout Penwortham, predominantly in the east and north-west. There are moderately sloping areas located in the east. The agricultural land is predominantly Grade 3 (Good to Moderate Quality Agricultural Land) with areas of Grade 1 (Excellent Quality Agricultural Land), Grade 2 (Very Good Quality Agricultural Land) and Grade 4 (Poor Quality Agricultural Land). Other areas within the study area are Urban. There is potential to avoid the SSSI, landfills and areas of prime agricultural land within the 5km buffer area, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water There are rivers and lakes located throughout Penwortham, the most significant of which is the River Ribble. There are a number of national flood zones located throughout Penwortham. There are areas benefitting from flood defences located along the River Ribble. The rivers, lakes, flood zones and areas benefitting from flood defences within the study area can be avoided, avoiding the potential for significant direct effects. There is potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There are four air quality management areas located within Preston. There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. There is potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for the burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. There is potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure, reducing the requirement for the burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas are mainly located in the north (Cottam), east (Preston and Higher Penwortham) and south (Hutton, Walmer Bridge). There is an extensive road network throughout the area comprising A, B, minor, local, primary, restricted roads and tunnels. There are railway lines running through Preston. Preston Dock is located in the east. There is a range of electrical transmission infrastructure within the surrounding area, including the Penwortham 400kV substation and the Ribble GSP 132kV substation. There are 400kV, 275kV, 132kV and 33kV overhead lines connecting into these substations. The urban areas, roads, railway lines, Preston Dock and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. There is potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are six Parks and Gardens, mainly located in the north-east within Preston. There are 348 listed buildings in the study area located predominantly in Preston. There are also three scheduled monuments within Preston. These Parks and Gardens, listed buildings, and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
on heritage features identified within the study area. There is potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity The urban areas are mainly located in the north (Cottam), east (Preston and Higher Penwortham) and south (Hutton, Walmer Bridge). The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Penwortham requires two Developer AC Substations within the Preferred Option. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SPA, Ramsar, IBA, SSSIs and ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the SSSI, landfills and prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Peterhead1 Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_NE8	1 AC Developer Substation	Yes - HNDFUE
Cenos	1 DC Converter Station	Yes - INTOG
SW_NE7	1 AC Developer Substation	No – HND1
SW_E1b	1 AC Developer Substation	No – HND1
Broadshore	1 DC Converter Station	No – INTOG
NorthConnect	1 DC Converter Station	No - INTOG

Overview of Interface Area


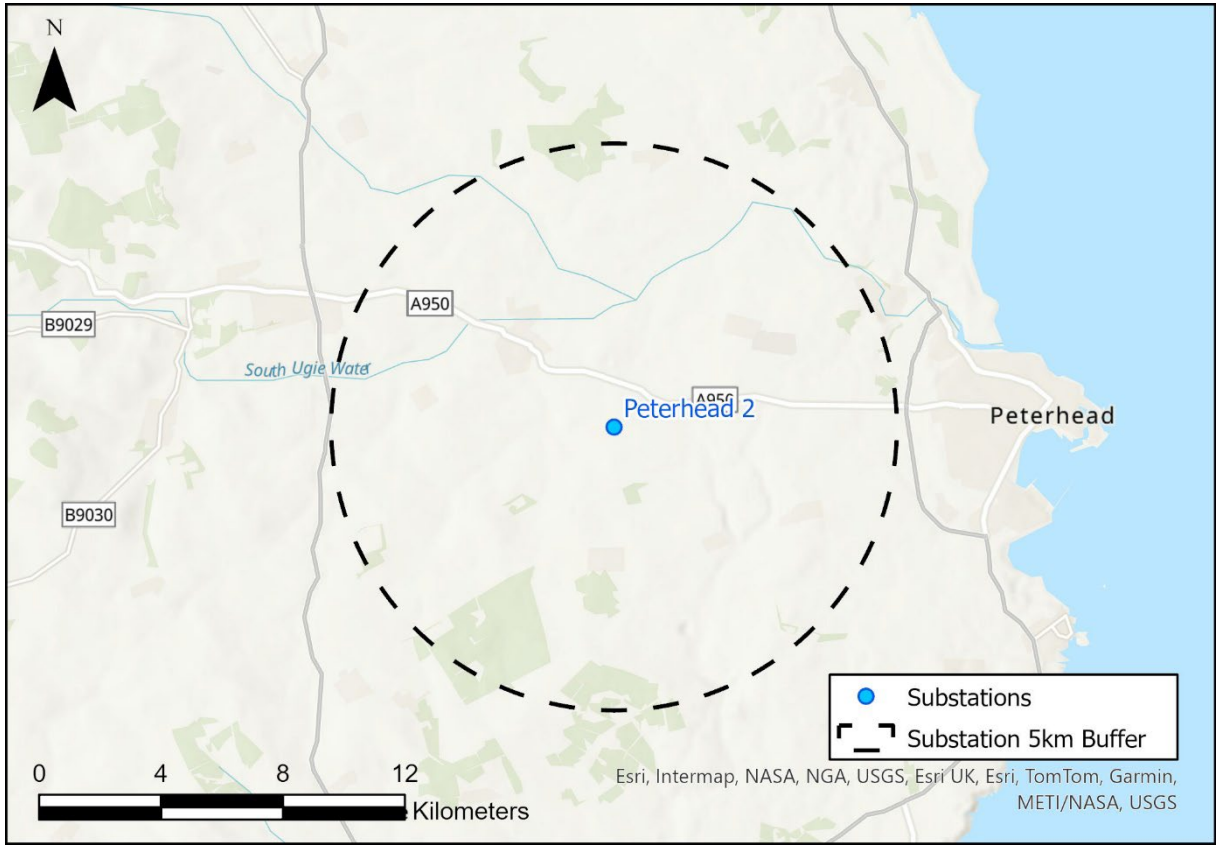
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SAC located along the coastline within Peterhead, namely Buchan Ness to Collieston SAC. The Buchan Ness to Collieston Coast SPA/IBA is located along the coastline. There are two SSSIs within Peterhead, namely Bullers of Buchan Coast SSSI and the Hill of Longhaven SSSI. There are small areas of ancient woodland within the west. The SAC, SPA, IBA, SSSIs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential	-1	-1	-1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.				
Population and Human Health There are urban areas to the north of Peterhead1 at Boddam and Peterhead. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There is one SSSI within the vicinity of Peterhead1, namely Hill of Longhaven SSSI, which is designated for geological interest. There are small areas of moderately sloping land throughout Peterhead. The agricultural land is a mixture of Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common) and Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops). Other areas within the study area are Urban. There is limited scope to avoid the areas of prime agricultural land within the 5km buffer area, as such, potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The SSSI and sloping land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the Peterhead study area. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance	-1	0/+2	0/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.				
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There is a road network throughout the area comprising A, B, minor, local, primary and restricted roads across Peterhead. There is electrical transmission infrastructure within the surrounding area, including one 400kV overhead line, one 275kV overhead line and three 132kV overhead lines. The Peterhead Grange 132kV Substation, Peterhead 400kV Substation, Peterhead 275kV Substation and Peterhead1 Converter 525kV DC Converter Station (under construction) are located within the area. The urban areas, roads, and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 348 listed buildings in the study area, predominantly located within the urban areas. There are also five scheduled monuments. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity There is an urban area to the north of Peterhead1 at Boddam and Peterhead. The Formartine and Buch Way National Trail is located to the north. The urban areas and National Trail are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the	-1	-1	-1	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Peterhead1 requires 1 AC Developer Substation and a DC Converter Station within the Preferred Option. One Bay and one DC TO Converter Station are also required at Peterhead1. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SAC, SPA, IBA, SSSIs and areas of ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the SSSI and areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers and their tributaries, and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Peterhead2/DCSS Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_NE6	1 AC Developer Substation	Yes - HNDFUE
SW_E2b	1 AC Developer Substation	Yes - HNDFUE
SW_NE7	2 DC Developer Connections and 1 TO DC Switching Station with 8 Bays.	Yes – HNDFUE
SW_NE7	1 AC Developer Substation	Yes- HND
Scaraben	1 AC Developer Substation	Yes - INTOG

Overview of Interface Area


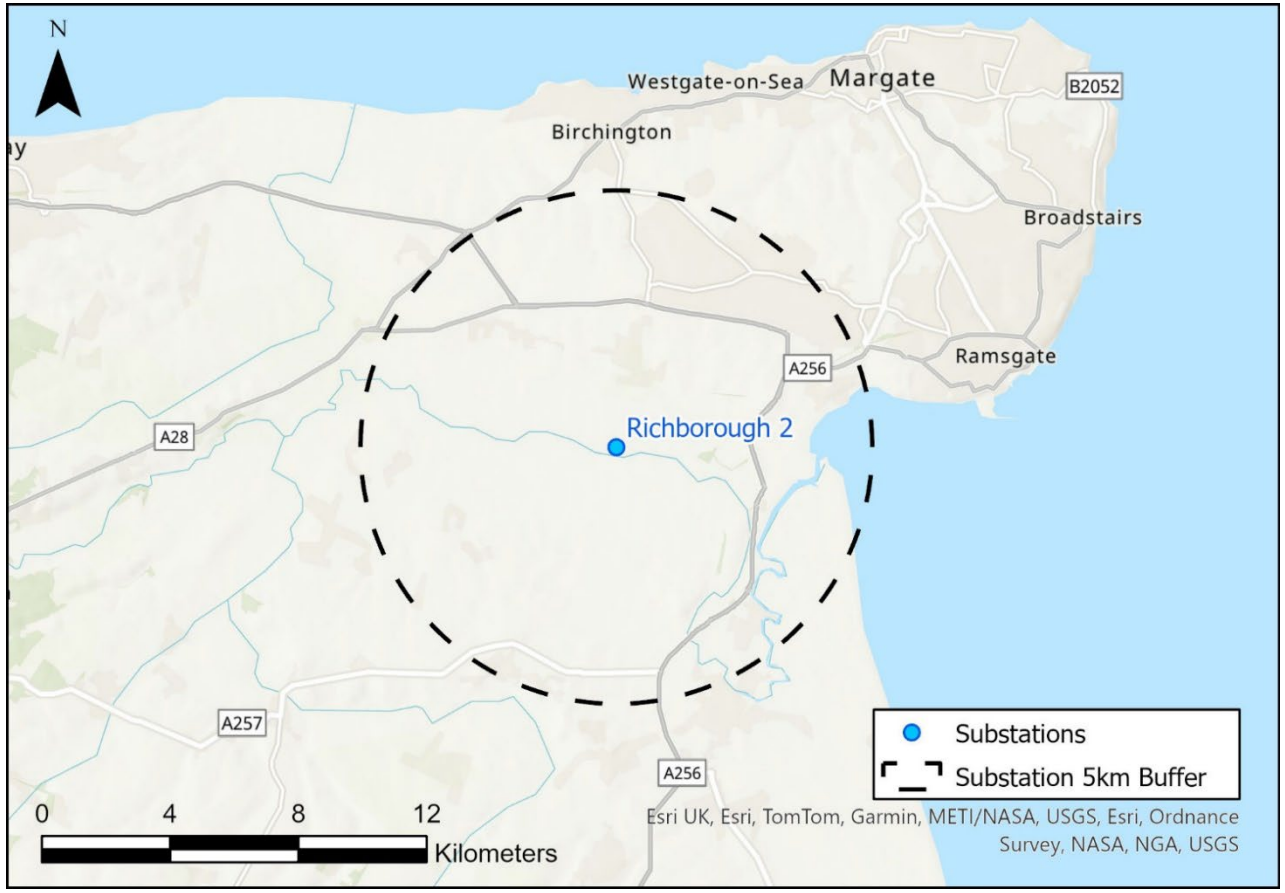
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SSSI in the vicinity of Peterhead2/DCSS, the Hill of Longhaven SSSI which is located in the south-east. There are small areas of ancient woodland throughout the area. The SSSI and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Population and Human Health There is an urban area to the north-west of Peterhead2/DCSS at Longside. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There is one SSSI within the vicinity of Peterhead2/DCSS, namely Hill of Longhaven SSSI, which is designated for geological interest. There are small areas of moderately sloping land throughout Peterhead2/DCSS. The agricultural land is a mixture of Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common) and Class 5.3 (Land capable of use as improved grassland. Pasture deteriorates quickly). There is limited scope to avoid the areas of prime agricultural land within the 5km buffer area, as such, potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The SSSIs and sloping land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the Peterhead2/DCSS study area, the most significant of which are the surface waters of the River Ugie. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There is an urban area to the north-west of Peterhead2/DCSS at Longside. There is a road network throughout the area comprising A, minor, local, primary and restricted roads across Peterhead2/DCSS. There is electrical transmission infrastructure within the surrounding area, including one 400kV overhead line in the south. The urban areas, roads, and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 23 listed buildings in the study area. There are also four scheduled monuments. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity There is an urban area to the north-west of Peterhead2/DCSS at Longside. The Formartine and Buch Way National Trail is located to the north. The urban areas and National Trail are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Peterhead2/DCSS requires 2 AC Developer Substations (2 HNDFUE / 1 INTOG) within the Preferred Option. 12 Bays and two DC TO Converter Substations are also required at				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Peterhead2/DCSS. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SSSI and areas of ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the SSSI and areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers and their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Richborough Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_E2a_2	1 Developer DC Converter Station	Yes – HNDFUE
Overview of Interface Area		



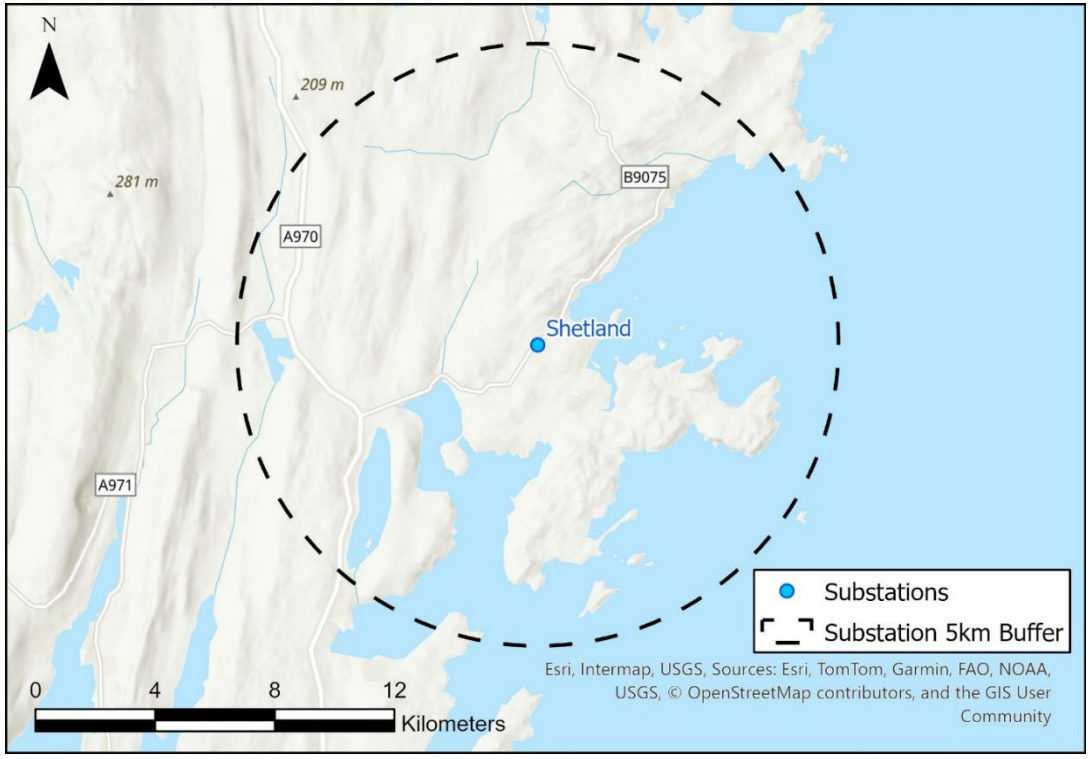
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SAC, namely Sandwich Bay SAC, located in the east. The Thanet Coast and Sandwich Bay SPA/Ramsar/IBA is located along the coast in the east. There is one SSSI located along the coast in the east, namely Sandwich Bay to Hacklinge Marshes SSSI. The Sandwich & Pegwell Bay Nature Reserve is located along the coast. Additionally, the Thanet Coast SAC is located partially within the study area; however, designation is offshore. The SAC, SPA, Ramsar, IBA, SSSI and Nature Reserve are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas of Cliffsends, Minster, Monkton, Manston, Manston Park, Ash and Sandwich are located in the 5km buffer area. The settlement/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for indirect negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There is one SSSI is designated for geological interest, namely Sandwich Bay to Hacklinge Marshes SSSI. There are 19 landfill sites located in the study area. The agricultural land is comprised of large areas of Grade 1 (Excellent Quality Agricultural Land), located in the north and south. There are areas of Grade 2 (very good quality agricultural land), Grade 3 (good to moderate quality agricultural land), Grade 4 (poor quality agricultural land) and Grade 5 (very poor quality agricultural land) agricultural land. The remaining areas are comprised of Non-Agricultural and Urban areas. There is limited scope to avoid the areas of prime agricultural land within the 5km buffer area, as such, potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The SSSI and landfill site are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the Richborough study area, the most significant of which are the surface waters of the River Stour. There are National Flood Zones located along the coastline	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
and along the River Stour and its tributaries. There are areas benefiting from flood defences located in the south-east and to the south of Monkton/Minster. The rivers, lakes, flood zones and areas benefiting from flood defences within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.				
Air The Thanet Urban Air Quality Management Area (AQMA) is located in the north-east at Cliffsend. There is unlikely to be any significant negative effects on air quality within the study area. There is potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas of Cliffsends, Minster, Monkton, Manston, Manston Park, Ash and Sandwich are located in the 5km buffer area. There is an extensive road network throughout the area comprising A, B, local, minor, restricted and primary roads. There are two railway lines within the area. There is onshore transmission infrastructure located within the 5km buffer area, including a 400kV overhead line, two 132kV overhead lines, 132kV cable, 400kV (Nemo Link) cable, the Richborough 400kV substation, Richborough 132kV Substation and the NEMO Link 400kV Converter Station. The urban areas, roads, railway lines and onshore transmission infrastructure are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for indirect short-term, temporary negative effects from localised disruption of other users or assets during construction	-1/+1	-1/+2	-1/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.				
Cultural, Architectural and Archaeological Heritage There are 202 listed buildings in the study area. There are also 12 scheduled monuments in the study area. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	-1	-1	Direct & Indirect
Landscape / Seascape and Visual Amenity The urban areas of Cliffsends, Minster, Monkton, Manston, Manston Park, Ash and Sandwich are located in the 5km buffer area. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Richborough requires one Developer DC Converter Station and one Transmission Owner (TO) AC Substation, and two TO DC Converter Stations within the Preferred Option. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SAC, SPA, Ramsar, IBA, SSSI and Nature Reserve present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the SSSI and landfills, and direct negative effects on areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the River Stour, its tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Shetland Hub Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_NE1a	1 AC Developer Substation	Yes - HNDFUE
SW_NE1b	1 AC Developer Substation	Yes - HNDFUE
SW_NE1c	1 AC Developer Substation	Yes - HNDFUE
Overview of Interface Area		

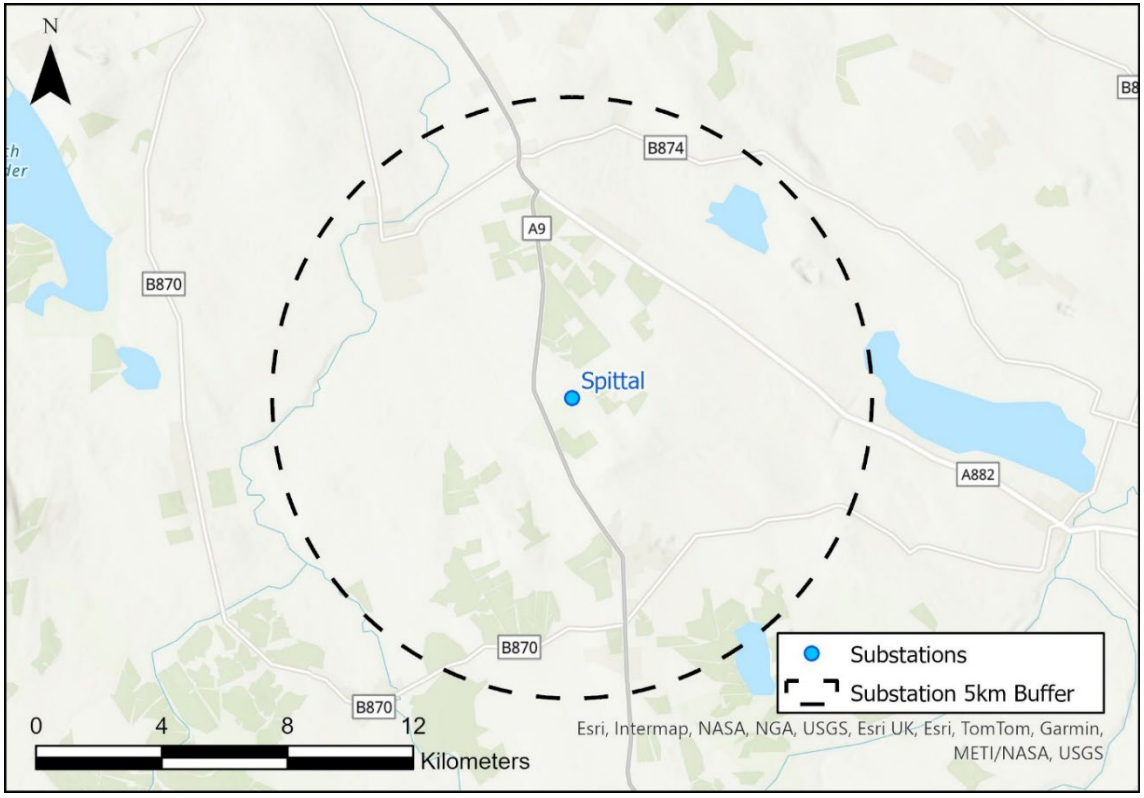


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SPA located within the 5km buffer area, namely East Mainland Coast, Shetland SPA in the east and south. Three SSSIs are located within the west of the 5km buffer area, including Catfirth SSSI, Loch of Girlsta SSSI and Sandwater SSSI. One IBA is within the west of the 5km buffer area, namely the Moorlands Areas, Central Shetland IBA. The SPAs, SSSIs and IBAs are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are no urban areas located in the 5km buffer area. However, there are smaller towns and villages within the 5km buffer area, which are avoidable, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use The Shetland UNESCO Geopark is located within the west of the 5km buffer area. There are areas of moderately sloping land located across the 5km buffer area, as well as some smaller areas of steeper sloping land, predominantly located along the coastline. The agricultural land is predominantly Class 6.3 (Land capable of use as rough grazings with low quality plants) with smaller areas of Class 5.2 (Land capable of use as improved grassland, there are few problems with pasture establishment but may be difficult to maintain) and very small areas of Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops). The Geopark, and areas of sloping land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There are no areas of prime agricultural potential within the 5km buffer area. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water The South Nesting Bay is located in the east of the study area, whilst rivers and lakes are located throughout the Shetland Hub study area. There are National Flood Zones, along the rivers and their tributaries, as well as along the coastline. The South Nesting Bay, rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There is a road network throughout the area comprising A roads, B roads, minor, local and restricted roads across the 5km study area. The roads are within the study area, but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+2	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There is one listed building at Brettabister and 28 scheduled monuments in the study area. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity There are small towns and villages within the 5km buffer area. These can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on the	-1	-1	-1	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HNDFUE Developments within the Interface Area. Shetland Hub requires 3 AC Developer substations within the Preferred Option. One AC TO substation and one TO DC converter substation are also required within the Preferred Option. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SPAs, SSSIs and IBAs present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the UNESCO Geopark within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the South Nesting Bay, rivers and their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Spittal Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_NE2	1 AC Developer Substation	Yes – HNDFUE
SW_N1	1 AC Developer Substation	Yes – HND1
SW_N2	3 AC Developer Substations, 4 Bays and 1 DC TO Converter Stations	No – HNDFUE
SW_N4	1 AC Developer Substation	No – HND1
Overview of Interface Area		

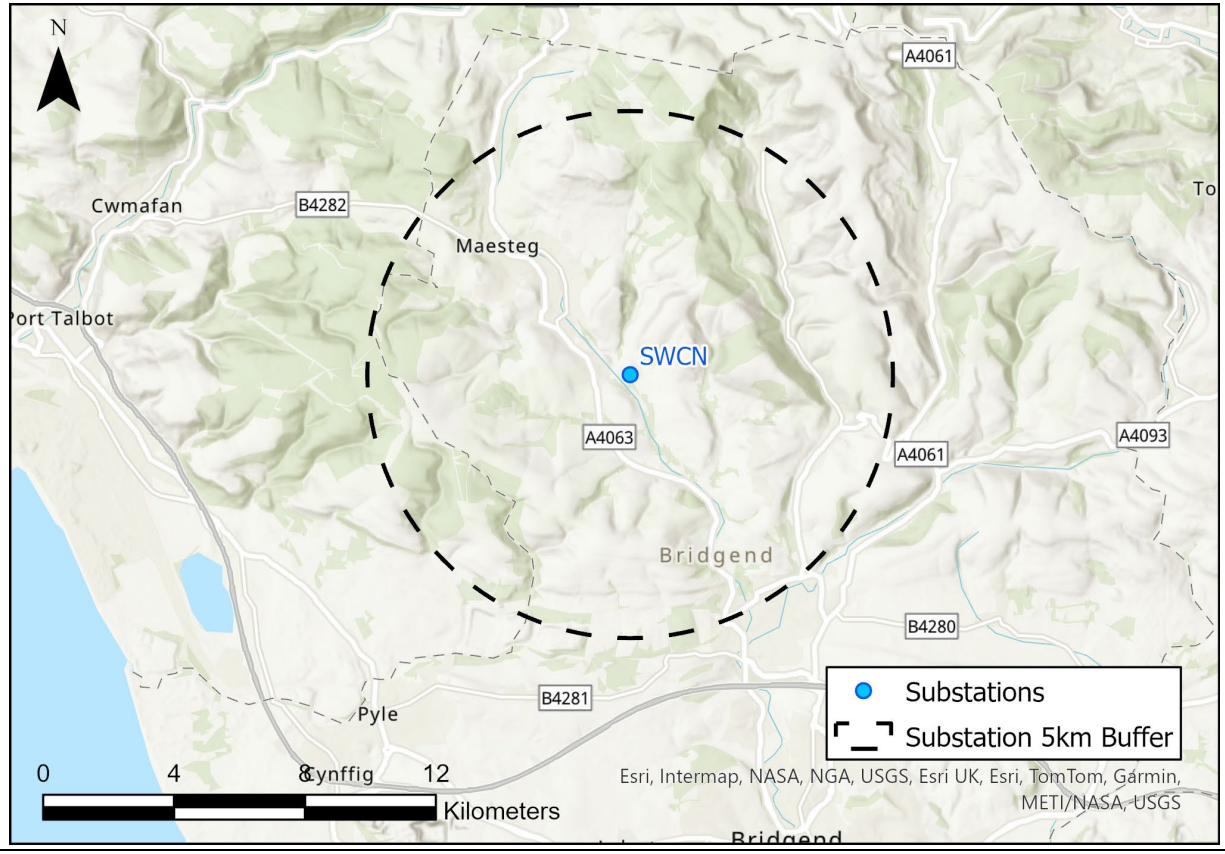


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are two SACs in the vicinity of Spittal, the River Thurso SAC is located in the west and the Loch Watten SAC is located to the north-east. The Caithness Lochs SPA/Ramsar/IBA is located in the north-east. There are five SSSIs within the vicinity of Spittal, namely Achanarras Quarry SSSI, Banniskirk Quarry SSSI, Loch Scarmclate SSSI, Loch Wattern SSSI and Spittal Quarry SSSI. There is a small area of ancient woodland to the north. The SAC, SPA, Ramsar, IBA, SSSIs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There is an urban area to the north-west of Spittal at Halkirk. The settlements/urban areas within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+1	-1/+1	Indirect / Indirect
Geology, Soils and Land Use There are five SSSIs within the vicinity of Spittal, namely Achanarras Quarry SSSI, Banniskirk Quarry SSSI, Loch Scarmclate SSSI, Loch Wattern SSSI and Spittal Quarry SSSI, which are designated for geological interest. There are areas of moderately sloping land located across Spittal. The agricultural land is a mixture of Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), Class 5.3 (Land capable of use as improved grassland. Pasture deteriorates quickly), and Class 6.3 (Land capable of use as rough grazings with low quality plants). The SSSIs, areas of prime agricultural land and sloping land, are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout the Spittal study area, the most significant of which are the surface waters of the River Thurso. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+1	0/+1	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+1	0/+1	Direct / Indirect
Material Assets and Infrastructure There is an urban area to the north-west of Spittal at Halkirk. There is a road network throughout the area comprising A, B, minor, local, primary and restricted roads across Spittal. There is a railway in the north running west to east. There is electrical transmission infrastructure within the surrounding area, including one 275kV overhead line connecting into the Spittal 320kV substation and one 132kV overhead line connecting into Mybster 132kV Substation. The urban areas, roads, railway and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+1	-1/+1	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are seven listed buildings in the study area. There are also 19 scheduled monuments. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity	-1	-1	-1	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is an urban area to the north-west of Spittal at Halkirk. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Spittal requires two AC Developer Substations within the Preferred Option. A TO AC substation and one DC Converter Station are also required at Spittal. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SAC, SPA, Ramsar, IBA, SSSIs and areas of ancient woodland present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the SSSIs and areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the rivers and their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

SWCN Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
PDA 2	1 Developer Converter Station	Yes – Celtic Sea
PDA1	2 Developer Converter Stations	No – Celtic Sea
Overview of Interface Area		



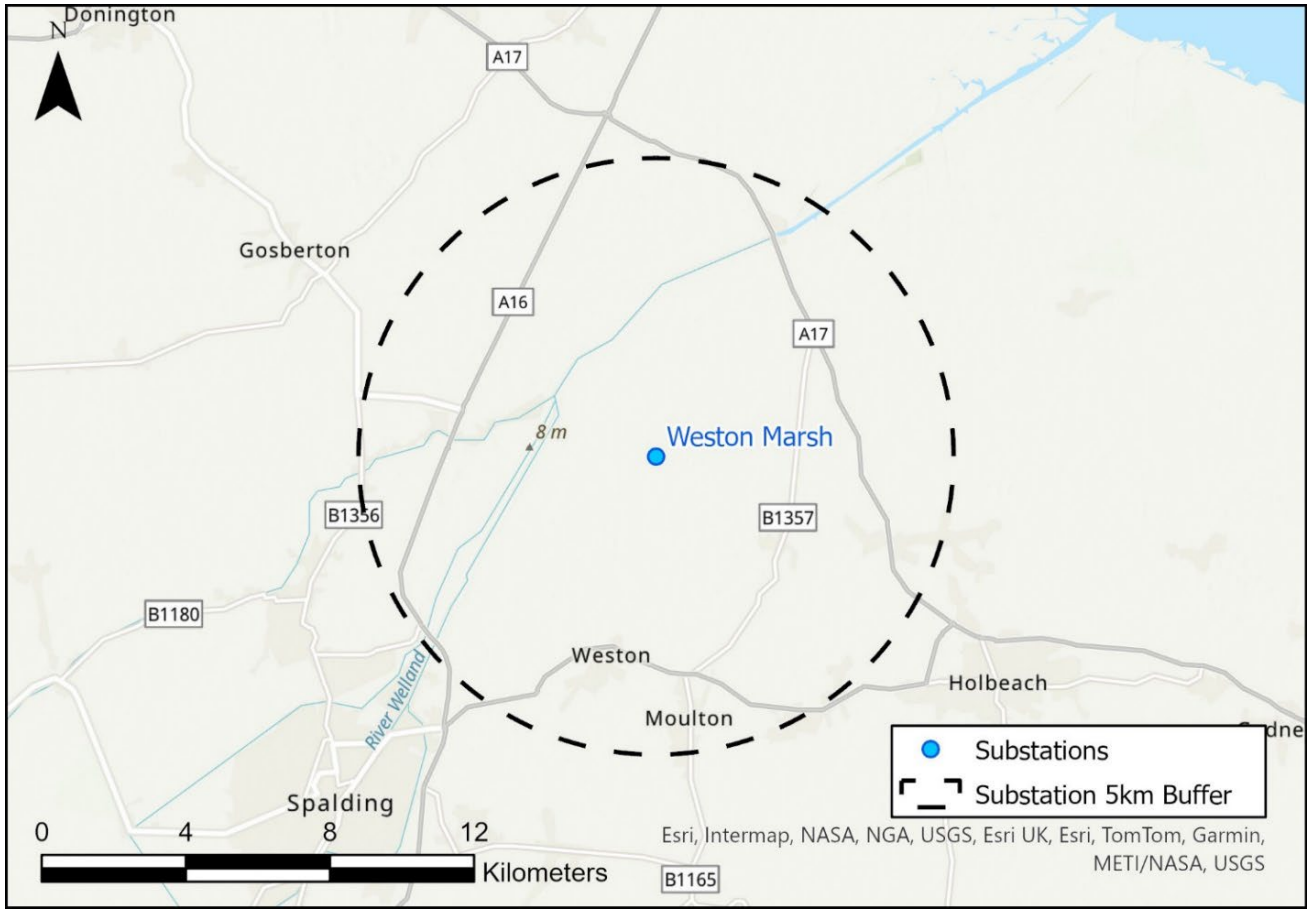
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are three SSSIs, namely Cwm Du Woodlands SSSI and Cwm Cyffog SSSI, located in the north-east of SWCN and Cwm Risca Meadow SSSI, located in the south. There are areas of ancient woodlands scattered throughout SWCN, mainly concentrated in the south-east, as well as along the River Llynfi channel in the south and the Afon Garw River in the east. The SSSIs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are urban areas predominantly located along the River Llynfi, including Nanyffylion, Maesteg, Garth, Cwmfelin in the north-west, Llangynwyd in the centre and Bettws in the south-east. The urban area of Pontycymer is located in the north-east, surrounding the Afon Garw River. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use Much of SWCN comprises an upland area. These areas are located on either side of the River Llynfi, particularly throughout the north-east and west of SWCN. Areas within and surrounding these uplands are moderately sloping, whilst small areas are steeply sloping in the east (near Pont-y-rhyl). The agricultural land is a mixture of Class 3a (Good Quality Agricultural Land), Class 3b (Moderate Quality Agricultural Land), Class 4 (Poor Quality Agricultural Land) and Class 5 (Very Poor Quality Agricultural Land). Other areas within the study area are Urban and Non-Agricultural Land. The uplands, prime agricultural land and sloping land are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the SWCN study area, the most significant of which are the surface waters of the River Llynfi and Afon Garw River. There are National Flood Zones located along the River Llynfi and Afon Garw River. The rivers, lakes and flood zones within the study area can be avoided, avoiding the	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.				
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There are urban areas predominantly located along the River Llynfi, including Nanyffylion, Maesteg, Garth, Cwmfelin in the north-west, Llangynwyd in the centre and Bettws in the south-east. The urban area of Pontycymer is located in the north-east, surrounding the Afon Garw River. There is a road network throughout the area comprising A, B, minor, local and restricted roads, concentrated within and between the urban areas surrounding the River Llynfi and in the north-east within Pontycymer and Pont-y-rhyl. The road network is relatively sparse in the upland areas. There are railway lines within SWCN running from Measteg in the north to Bridgend in the south-east, as well as from Pontycymer in the north-east towards Llangeinor, located just outside the south-east boundary. There is electrical transmission infrastructure within the surrounding area, including one 400kV overhead line extending across SWCN from north-west to south-east. The urban areas, roads, railways, and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 122 listed buildings in the study area, predominantly concentrated in Maesteg in the north-west, with some located in the centre, south-east and north-east. There are also 17 scheduled monuments in the study area, which are mainly located across the south-west. There are two Parks and Gardens located in Coytrahan in the south-east. These listed buildings, scheduled monuments and parks and gardens can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity There are urban areas predominantly located along the River Llynfi, including Nanyffylion, Maesteg, Garth, Cwmfelin in the north-west, Llangynwyd in the centre and Bettws in the south-east. The urban area of Pontycymer is located in the north-east, surrounding the Afon Garw River. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. SWCN requires one Developer Substation within the Preferred Option. A TO Substation is also required at SWCN. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SSSIs and areas of ancient woodlands present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the River Llynfi and Afon Garw River, their tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary				

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Weston Marsh Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_E1c_2	1 Developer DC Converter Station and 1 Developer AC Substation	Yes – HNDFUE
R4_3	1 Developer DC Converter Station and 1 Developer AC Substation	Yes – HND1
Overview of Interface Area		

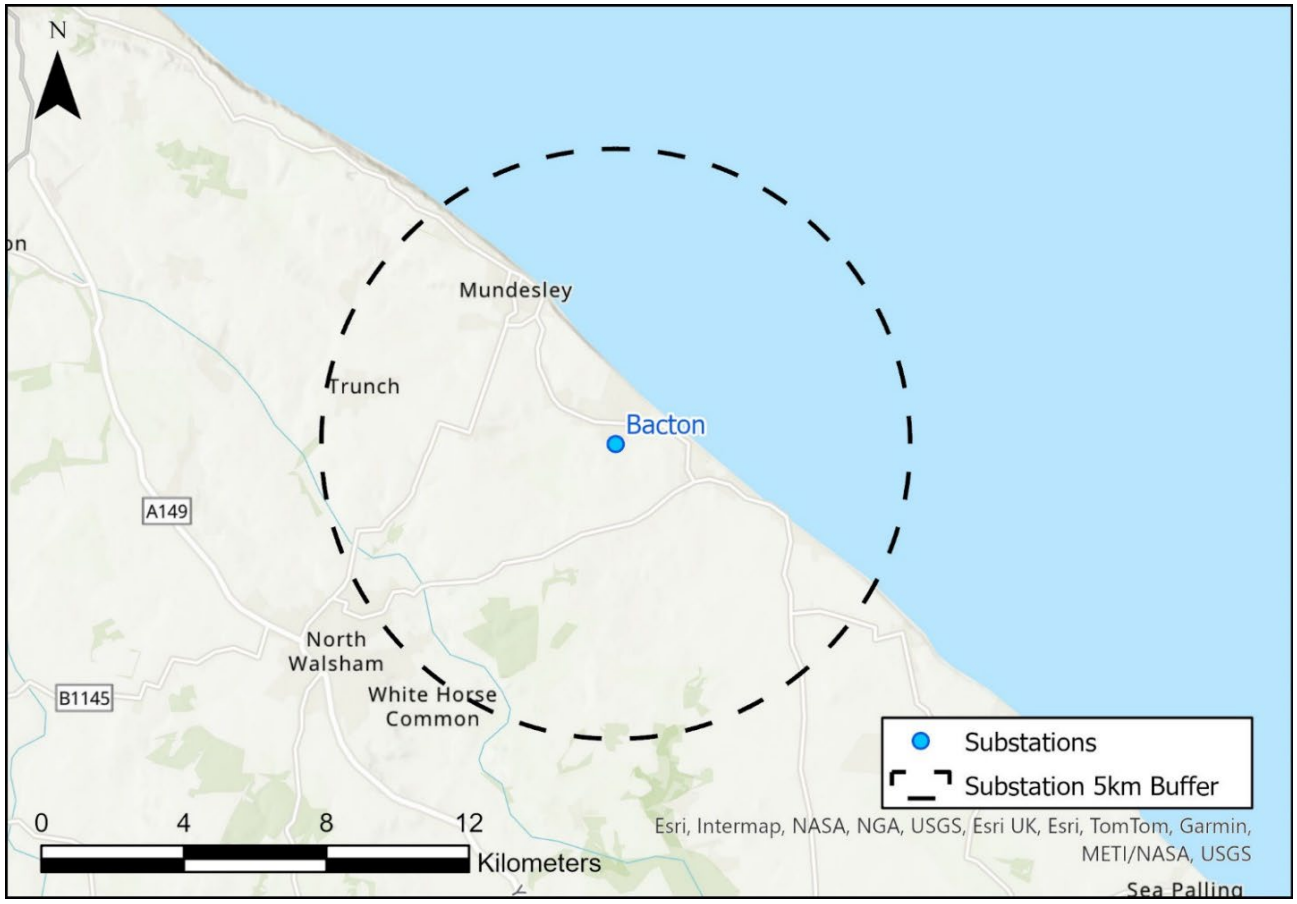


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SSSI located along the coast in the west, namely Surfleet Lows SSSI. The Wash IBA is partially located in the north-east. The SSSI and IBA are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas of Surfleet, Weston, Moulton, Whaplode, Saracen's Head and Moulton Seas End are located in the 5km buffer area. The settlement/urban areas of Surfleet, Weston, Moulton, Whaplode, Saracen's Head and Moulton Seas End are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for indirect negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are four landfill sites located in the study area, two are located in the south-east and two are located in the north-west. The agricultural land is comprised of Grade 1 (Excellent Quality Agricultural Land), which encompasses the entire 5km buffer area. There is no potential to avoid the areas of prime agricultural land within the 5km buffer area, as such potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The landfills are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the Weston Marsh study area, the most significant of which are the surface waters of the River Welland. There are National Flood Zones which encompass the majority of the 5km buffer area, whilst National Flood Zones are located along the River Welland and its tributaries. The rivers and lakes within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction. However, it may be difficult to completely avoid the National Flood Zones within	-2	-2	-2	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
the 5km buffer area, as such potential for moderate effects on W cannot be avoided within the interface 5km buffer area.				
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas of Surfleet, Weston, Moulton, Whaplode, Saracen's Head and Moulton Seas End. There is an extensive road network throughout the area comprising A, B and primary roads. There is onshore transmission infrastructure located within the 5km buffer area including three 400kV overhead lines and, their associated transmission poles, which cross the north-west, south-west and south-east, respectively. The urban areas, roads and onshore transmission infrastructure are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for indirect short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 52 listed buildings in the study area, which are predominantly concentrated in the south. There are also four scheduled monuments in the study area, which are located in the south. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant	-1	-1	-1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity The urban areas of Surfleet, Weston, Moulton, Whaplode, Saracen's Head and Moulton Seas End. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
There is potential for cumulative and in-combination effects in relation to preferred HND Developments within the Interface Area. Weston Marsh requires one Developer DC Converter Station and one Developer AC Substation within the Preferred Option. The combination of these developments has the potential for cumulative effects on SEA topics. In relation to Biodiversity, Flora and Fauna, there is potential for increased direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term, as well as the potential for increased indirect effects on the SSSI and IBA present within the Interface Area. In terms of Population and Human Health, there is potential for increased indirect negative effects on the local population in the short, medium and long-term. Regarding Geology, Soils and Land Use, there is potential for increased indirect negative effects on the landfills and direct negative effects areas of prime agricultural land within the Interface Area, as well as increased long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure. Concerning Water, there is potential for increased temporary, short-term negative effects on water quality of the River Welland, its tributaries and various lakes during construction. In terms of Air, there is the potential for increased short-term, temporary negative effects on air quality during construction and maintenance activities, whilst for Climatic Factors, there is potential for increased short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Regarding Material Assets and Infrastructure, there is potential for increased direct short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Concerning Cultural, Architectural and Archaeological Heritage, there is potential for increased short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction, whilst for Landscape / Seascape and Visual Amenity, there is potential for increased for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				

Bacton Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_E1c_1	1 Developer DC Converter Statio	No - HNDFUE
Overview of Interface Area		



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SAC, namely Paston Great Barn SAC. There is one SSSI, Paston Great Barn SSSI, and a Nature Reserve, Paston Great Barn, located within the study area. There are areas of ancient woodland in the south/south-west. Additionally, the Southern North Sea SAC, Greater Wash SPA, Mundesley Cliffs SSSI and Sidestrand and Trimingham Cliffs SSSI are located offshore within the study area; however, they are all located adjacent to the coastline. The SAC, SSSIs, Nature Reserve and areas of ancient woodlands are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are urban areas including Mundesley, Paston, Bacton, Trunch and North Walsham. The urban areas/settlements are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for indirect negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are five landfill sites located in the study area. The agricultural land is a mixture of Grade 1 (excellent quality agricultural land), Grade 2 (Very Good Quality Agricultural Land) and Grade 3 (Good to Moderate Quality Agricultural Land). There is limited scope to avoid the areas of prime agricultural land within the 5km buffer area, as such, potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The landfills are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the Bacton study area. There are National Flood Zones are located along the rivers. The rivers, lakes and National Flood Zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air	-1	0/+2	0/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.				
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There are urban areas including Mundesley, Paston, Bacton, Trunch and North Walsham. There is an extensive road network throughout the area comprising A roads and B roads. There is a military bunker located along the coastline. The urban areas, and roads are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for indirect short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-2/+1	-2/+2	-2/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 93 listed buildings in the study area. There are also two scheduled monuments in the study area, which are located predominantly in the north-east. The Honing Hall Park and Garden is located in the south-west. These listed buildings, scheduled monuments and parks and gardens can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity	-2	-2	-2	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are urban areas including Mundesley, Paston, Bacton, Trunch and North Walsham. The Norfolk Coast AONB is located in the north. The Broads National Park is partially located in the south-west. The urban areas, The Broads National Park and the Norfolk Coast AONB are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				
Cumulative and in combination issues				
No cumulative and in combination issues identified as only assessed for one standalone route with no potential for cumulative effects with any other HND developments.				

Baglan BayOnshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
PDA 2	1 Developer DC Converter station	No – HND Celtic Sea
Overview of Interface Area		

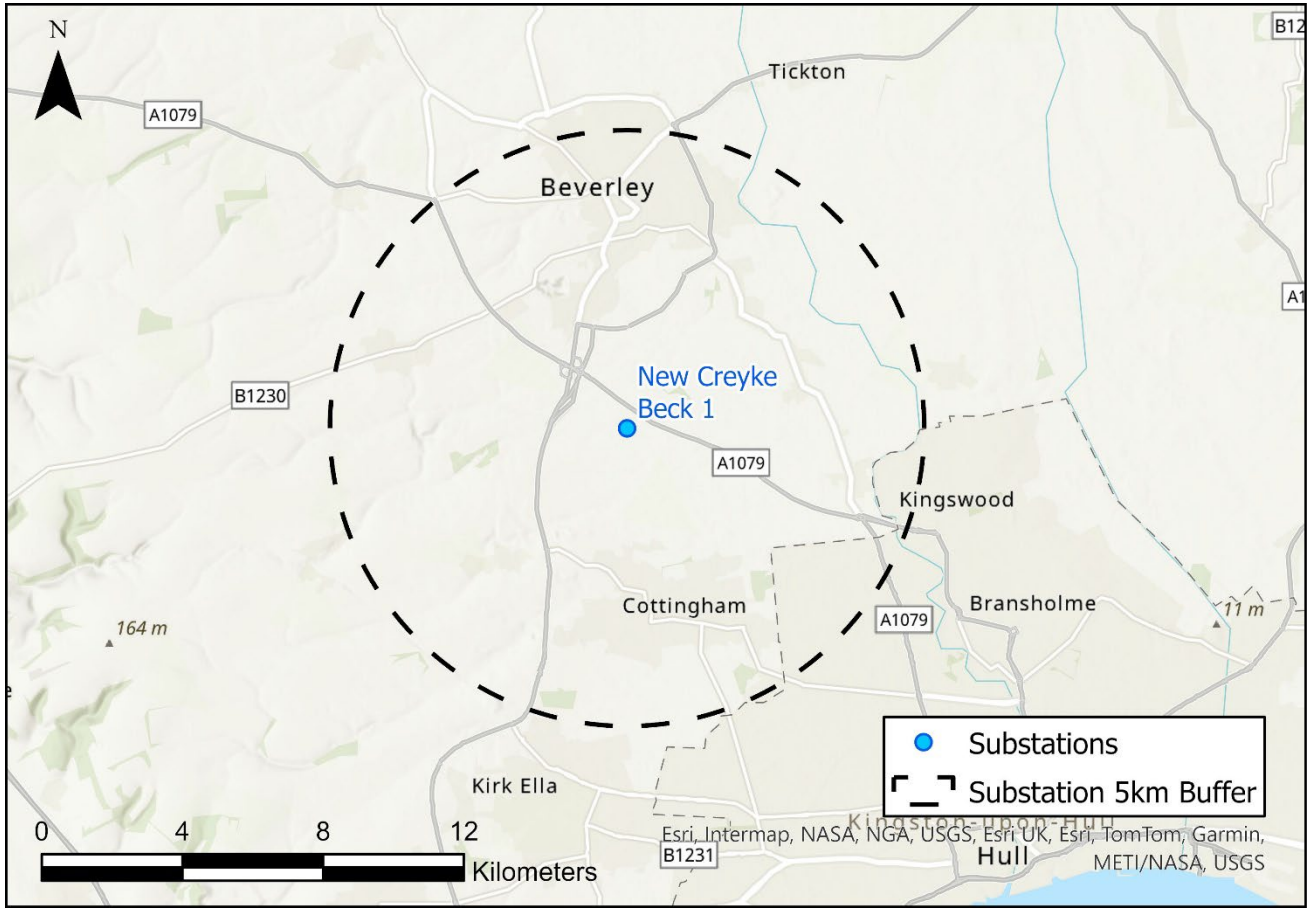


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SAC, namely Crymlyn Bog / Cors Crymlyn located within Baglan Bay. The Crymlyn Bog Ramsar is located within the study area. There are four SSSIs, namely Cors Crymlyn / Crymlyn Bog SSSI, Crymlyn Burrows SSSI, Earlswood Road Cutting and Ferryboat Inn Quarries SSSI and Pant-y-Sais SSSI. There is one nature reserve, Crymlyn Bog and Pany Y Sais. There are NRW Key sensitive habitats within the study area, including Peat and clay exposures; however, these are predominantly located offshore. There are areas of ancient woodlands scattered Baglan Bay, mainly concentrated in the north. The SAC, Ramsar, SSSIs, nature reserve, NRW habitats and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are urban areas including Port Talbot, Baglan Moors, Briton Ferry, Neath and Skewen. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are two SSSIs designated for their geological interest, namely Cors Crymlyn / Crymlyn Bog SSSI and Earlswood Road Cutting and Ferryboat Inn Quarries SSSI. There are areas of upland and steeply sloping land in the east. There are areas of moderately sloping land which cover much of Baglan Bay. The agricultural land is a mixture of Class 2 (Very good agricultural land), Class 3a (Good Quality Agricultural Land), Class 3b (Moderate Quality Agricultural Land), Class 4 (Poor Quality Agricultural Land) and Class 5 (Very Poor Quality Agricultural Land). Other areas within the study area are Urban and Non-Agricultural Land. The SSSIs, prime agricultural land, uplands and sloping land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water The Neath Estuary is located within Baglan Bay, there are other smaller rivers within the study area. There are small lakes located throughout the study area. There are National Flood Zones located along the Neath Estuary and its tributaries. There is an area benefiting from flood defences located between Port Talbot and	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Baglan Bay. The rivers, lakes, flood zones and areas benefiting from flood defences are within the study area and can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.				
Air The Neath Port Talbot Air Quality Management Area Taibach/Margam is located partially within the study area. There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There are urban areas including Port Talbot, Baglan Moors, Briton Ferry, Neath and Skewen. There is a road network throughout the area comprising Motorways, A roads, B roads, minor, local and restricted roads. There are several railway lines within Baglan Bay. There are two ports within the study area, Port Talbot and Brition Ferry. There is electrical transmission infrastructure within the surrounding area, including one 275/132kV overhead line connecting into Baglan Bay, the Swansea North-TATA Steel Port Talbot overhead line and one 132kV overhead line. The Baglan Bay 275kV substation is located in the area. The urban areas, roads, railways, port lands and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are 69 listed buildings in the study area. There are also 15 scheduled monuments in the study area. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity There are urban areas including Port Talbot, Baglan Moors, Briton Ferry, Neath and Skewen. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified as only assessed for one standalone route with no potential for cumulative effects with any other HND developments				

Creyke Beck Onshore Interface Area		
Start Point	**Requirements**	**In Preferred Option (Y/N)**
R4_1	1 Developer DC Converter Station	No – HND1
R4_2	1 Developer DC Converter Station	No – HND1
Overview of Interface Area		

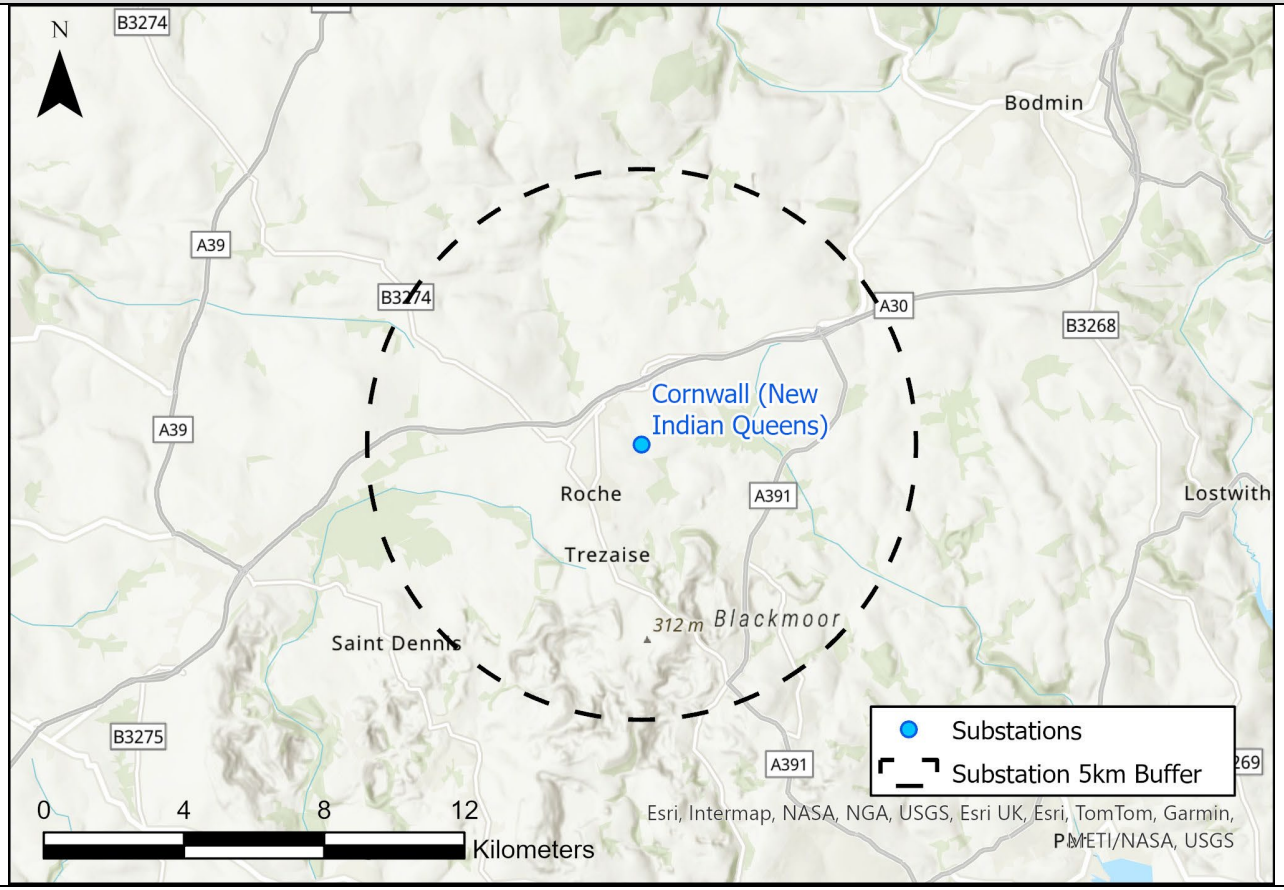


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna The Burton Bushes SSSI is located in the north-west of Creyke Beck. There are small areas of ancient woodlands around Creyke Beck. The SSSI and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas are located in the north (Beverley), north-east (Woodmansey), south (Cottingham), south-west (Skidby) and north-west (Walkington). The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are landfills located throughout Creyke Beck. There are small areas of moderately sloping land. The agricultural land is predominantly Grade 2 (Very Good Quality Agricultural Land), with areas of Grade 3 (Good to Moderate Quality Agricultural Land) and Class 4 (Poor Quality Agricultural Land). Other areas within the study area are Non-Agricultural and Urban. There is limited potential to avoid the areas of prime agricultural land within the 5km buffer area, as such potential for moderate effects on GSL cannot be avoided within the 5km buffer area. There is potential to avoid the areas of landfill within the 5km buffer area, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water There are rivers and lakes located throughout Creyke Beck. There are a number of national flood zones located within the east of Creyke Beck. There are areas benefitting from flood defences located in the east. The rivers, lakes, flood zones and areas benefitting from flood defences within the study area can be avoided, avoiding the potential for significant direct effects. There is potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air	-1	0/+2	0/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. There is potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.				
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. There is potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure, reducing the requirement for the burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas are located in the north (Beverley), north-east (Woodmansey), south (Cottingham), south-west (Skidby) and north-west (Walkington). There is an extensive road network throughout the area comprising A, B, minor, local, primary and restricted roads. There is a railway line located within the east, running north to south. There is a range of electrical transmission infrastructure within the surrounding area, including the Creyke Beck 400kV substation, the Dogger Bank A Wind Farm 400kV Converter Station and the Beverley 132kV substation. There are 400kV, 275kV, 132kV and 33kV overhead lines connecting into these substations. The urban areas, roads, railway line and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. There is potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are two Parks and Gardens, mainly located in the south of Creyke Beck. There are 511 listed buildings, predominantly located within the urban areas of Creyke Beck. There are 23 scheduled monuments within Creyke Beck. These Parks and Gardens, listed buildings, and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. There is potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity The urban areas are located in the north (Beverley), north-east (Woodmansey), south (Cottingham), south-west (Skidby) and north-west (Walkington). The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified, as there are no cumulative developments proposed as part of the HND within this Interface Area.				

Cornwall (New Indian Queens) Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
PDA 3	1 Developer AC substation	No – HND Celtic Sea
Overview of Interface Area		

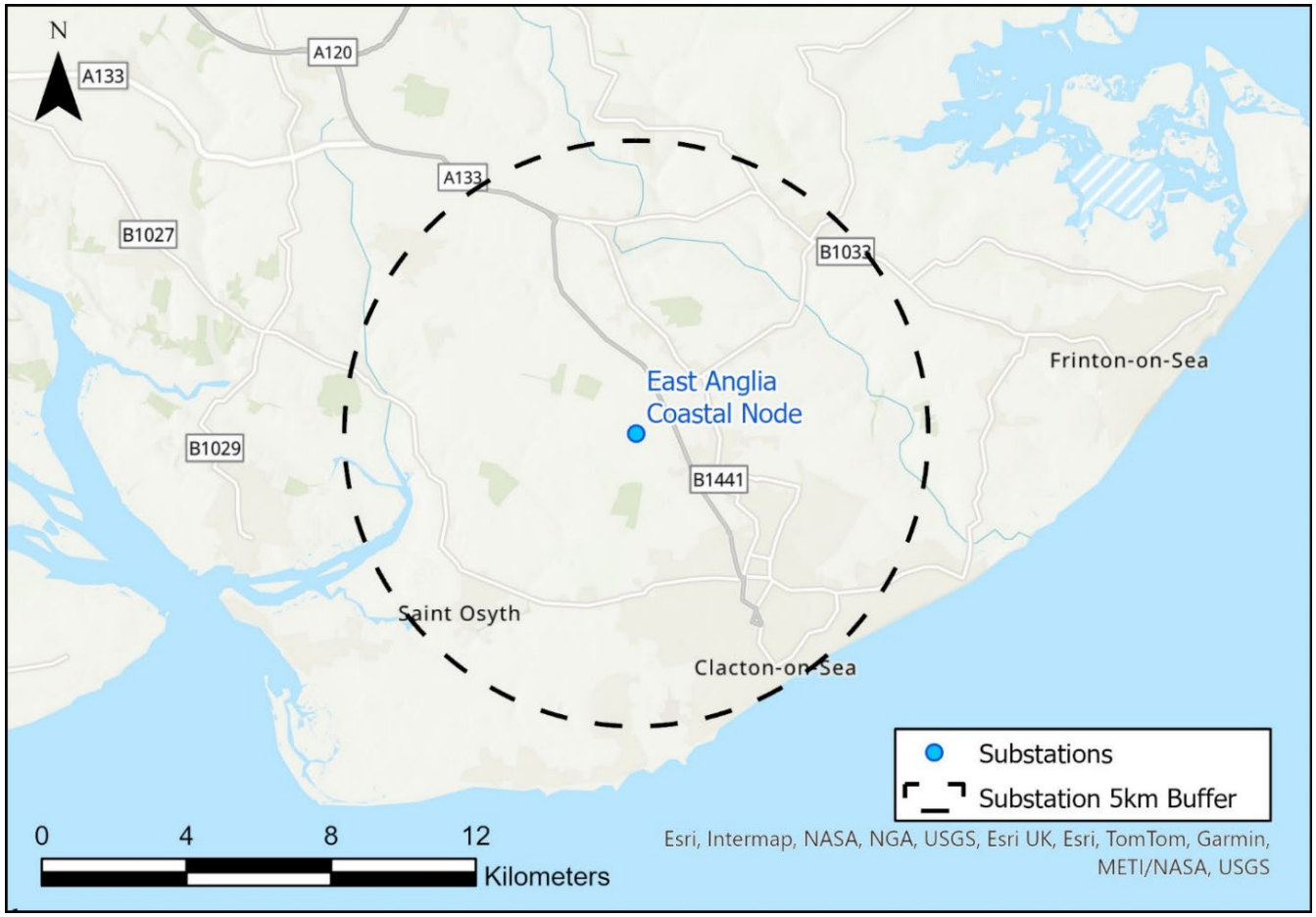


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are three SACs within Cornwall (New Indian Queens). The Breney Common and Goss & Tregoss Moors SAC is located in the west, the River Camel SAC is located in the north, and the St Austell Clay Pits SAC is located in the south. There are four SSSIs, namely De Lank Quarries SSSI, Mid Cornwall Moors SSSI, Roche Rock SSSI and St Austell Clay Pits SSSI. The Goss Moor Nature Reserve is located in the west. The SACs, SSSIs and nature reserve are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas of Roche and Stenalees are located within the study area. The urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for indirect negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are four SSSIs designated for their geological interest, namely De Lank Quarries SSSI, Mid Cornwall Moors SSSI, Roche Rock SSSI and St Austell Clay Pits SSSI. There is a large area of upland in the south/south-west and a small upland area in the north-west. There are small areas of steeply sloping land and areas of moderately sloping land, predominantly in the south and north. The agricultural land is predominantly Grade 3 (Good to Moderate Quality Agricultural Land) with areas of Grade 4 (Poor Quality Agricultural Land) and Grade 5 (Very Poor Quality Agricultural Land). Other areas are non-agricultural. The SSSIs, moderately sloping land, upland, and prime agricultural land are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout the Cornwall (New Indian Queens) study area. There are National Flood Zones located along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas of Roche and Stenalees are located within the study area. There is an extensive road network throughout the area comprising A roads, B roads, minor, local and restricted roads. There is a railway line running from west to south-east. There is a range of electrical transmission infrastructure in the area, including two 400kV overhead lines and two 132kV overhead lines. The urban area, roads, railway line and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for indirect short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 94 listed buildings in the study area. There are also 15 scheduled monuments. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity	-1	-1	-1	Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
The urban areas of Roche and Stenalees are located within the study area. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.				
Cumulative and in combination issues				
No cumulative and in combination issues identified as only assessed for one standalone route with no potential for cumulative effects with any other HND developments				

EACN Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_E2a_1	n/a1 Developer DC converter station	No - HNDFUE
Overview of Interface Area		

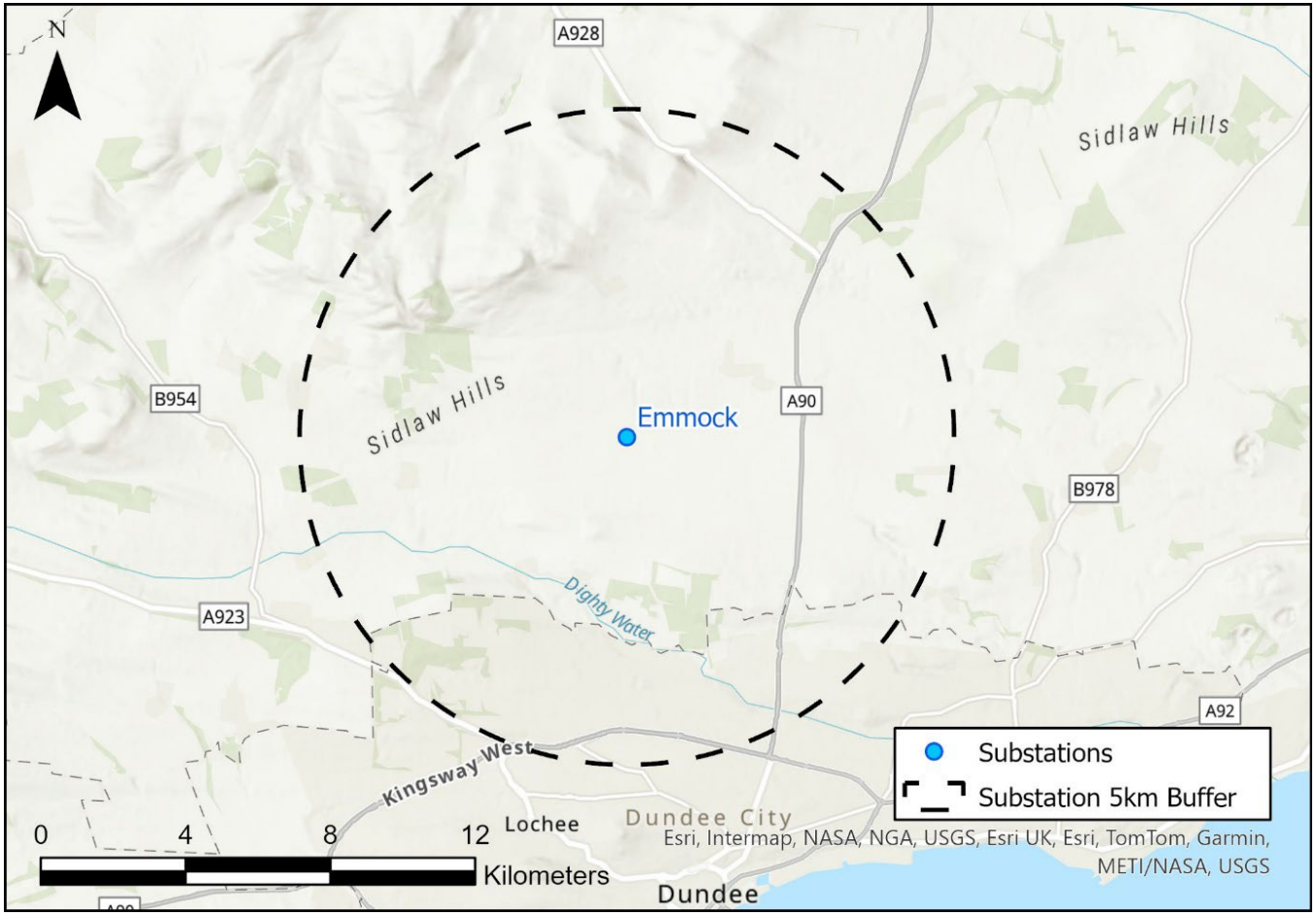


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is one SAC, Essex Estuaries SAC, located along Flag Creek. The Colne Estuary SPA/Ramsar and Mid-Essex Coast IBA are also located along Flag Creek. There are six SSSIs located across EACN, namely Clacton Cliffs & Foreshore SSSI, Colne Estuary SSSI, Holland Haven Marshes SSSI, Riddles Wood SSSI, St Osyth Pit SSSI and Weeleyhall Wood SSSI. There are areas of ancient woodland across EACN. The SAC, SPA, Ramsar, IBA, SSSIs and areas of ancient woodlands are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are urban areas including Clacton-on-Sea, Saint Osyth, Little Clacton, Thorpe-le-Soken, Weely and Great Bentley. The urban areas/settlements are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for indirect negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are three SSSIs located across EACN, namely Clacton Cliffs & Foreshore SSSI, Colne Estuary SSSI and St Osyth Pit SSSI, which are designated for their geological interest. There are 12 landfill sites located in the study area. The agricultural land is predominantly Grade 3 (Good to Moderate Quality Agricultural Land) with large areas of Grade 2 (Very Good Quality Agricultural Land) and Grade 4 (poor quality agricultural land). There are urban areas in the south. There is limited scope to avoid the areas of prime agricultural land within the 5km buffer area, as such, potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The SSSIs and landfills are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the EACN study area, the most significant of which are the surface waters of the Flag Creek. There are National Flood Zones are located along the rivers within the study area. There is an area benefitting from flood defences located along the banks of Flag	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Creek. The rivers, lakes and National Flood Zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.				
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There are urban areas including Clacton-on-Sea, Saint Osyth, Little Clacton, Thorpe-le-Soken, Weely and Great Bentley. There is an extensive road network throughout the area comprising A roads, B roads and primary roads. There are two railway lines within the study area. The urban areas, roads and railway lines are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for indirect short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 181 listed buildings in the study area. There are also two scheduled monuments in the study area, which are located in the south. There are three Parks and Gardens, Clacton Sea Front Gardens, St Osyth's Priory and Thrope Hall. These listed buildings, scheduled monuments and parks and gardens can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity There are urban areas including Clacton-on-Sea, Saint Osyth, Little Clacton, Thorpe-le-Soken, Weely and Great Bentley. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified as only assessed for one standalone route with no potential for cumulative effects with any other HND developments				

Emmock Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
Aspen	1 Developer DC Converter Station	NO - INTOG
Overview of Interface Area		

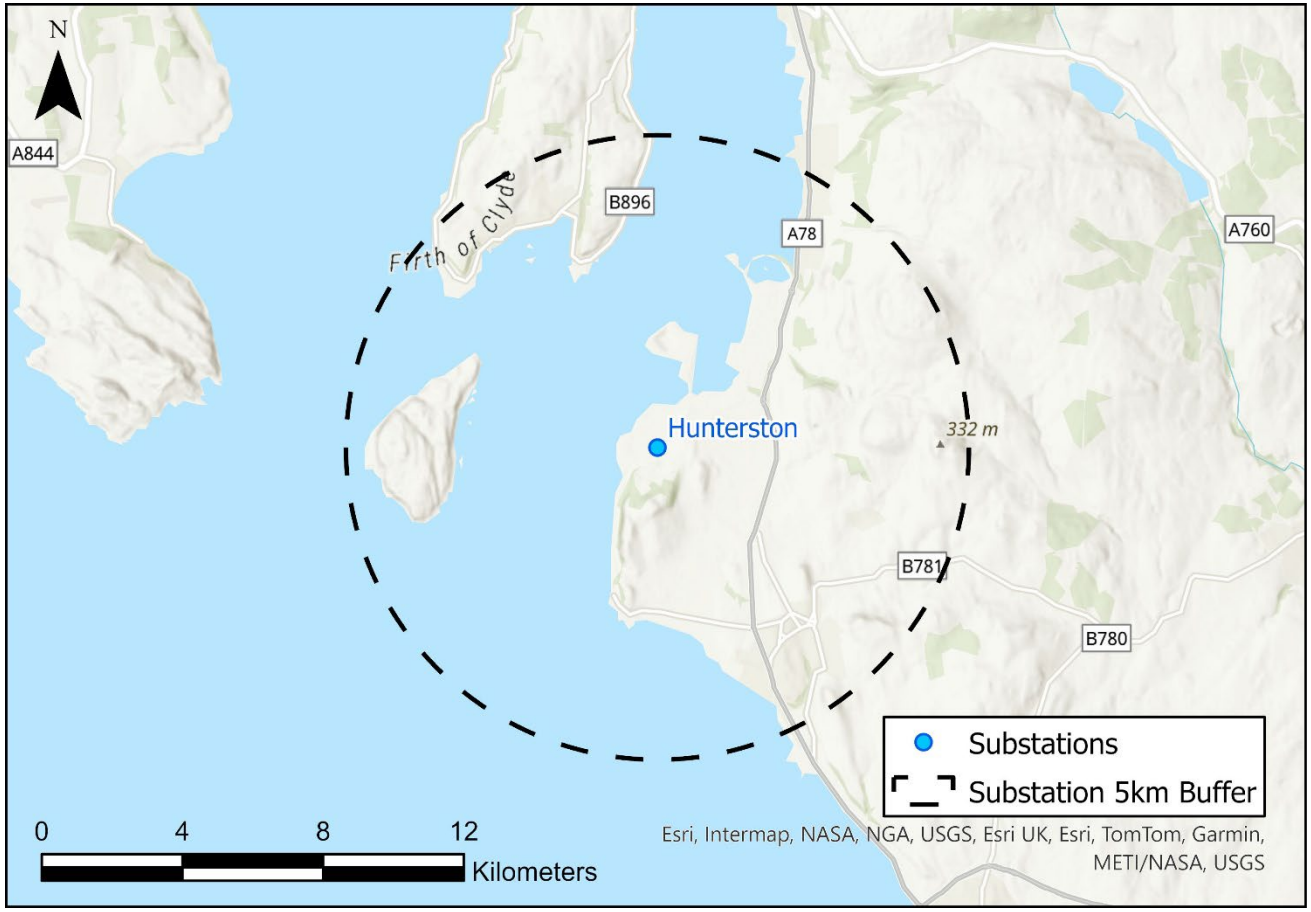


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are two SSSIs located within the Emmock area, namely Auchterhouse Hill SSSI and Whitehouse Den SSSI. There are areas of ancient woodland located across Emmock. The SSSIs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban area of Dundee is located within the south of the Emmock study area. The urban areas/settlements are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for indirect negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There is one SSSI, Whitehouse Den SSSI, which is designated for its geological interest. There are areas of upland in the north of Emmock and areas of steeply sloping and moderately sloping land. The agricultural land is predominately Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), with areas of Class 2 (Land capable of producing a wide range of crops), 3.1 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), Class 5.1 (Land capable of use as improved grassland. Few problems with pasture establishment and maintenance and potential high yields) and Class 5.2 (Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain). Other areas within the study area are Urban. The sloping land, uplands and prime agricultural land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout Emmock. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.				
Air The Dundee Air Quality Management Area (AQMA) is located in the south of Emmock at Dundee. There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban area of Dundee is located within the south of the Emmock study area. There is a road network throughout the area comprising A roads, B roads, minor, local, and restricted roads across Emmock. There is electrical transmission infrastructure within the surrounding area, including three 275kV overhead lines, four 132kV overhead lines and the Seagreen Wind Farm Cable. The Tealing 275kV Substation and Seagreen Wind Farm 220kV Substation are located within the study area. The roads and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 126 listed buildings in the study area. There are also 16 scheduled monuments. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity The urban area of Dundee is located within the south of the Emmock study area. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified as only assessed for one standalone route with no potential for cumulative effects with any other HND developments				

Hunterston Onshore Interface Area		
Start Point	**Requirements**	**In Preferred Option (Y/N)**
Girvan Tee	1 Developer DC Converter Station	N – HND1
Overview of Interface Area		

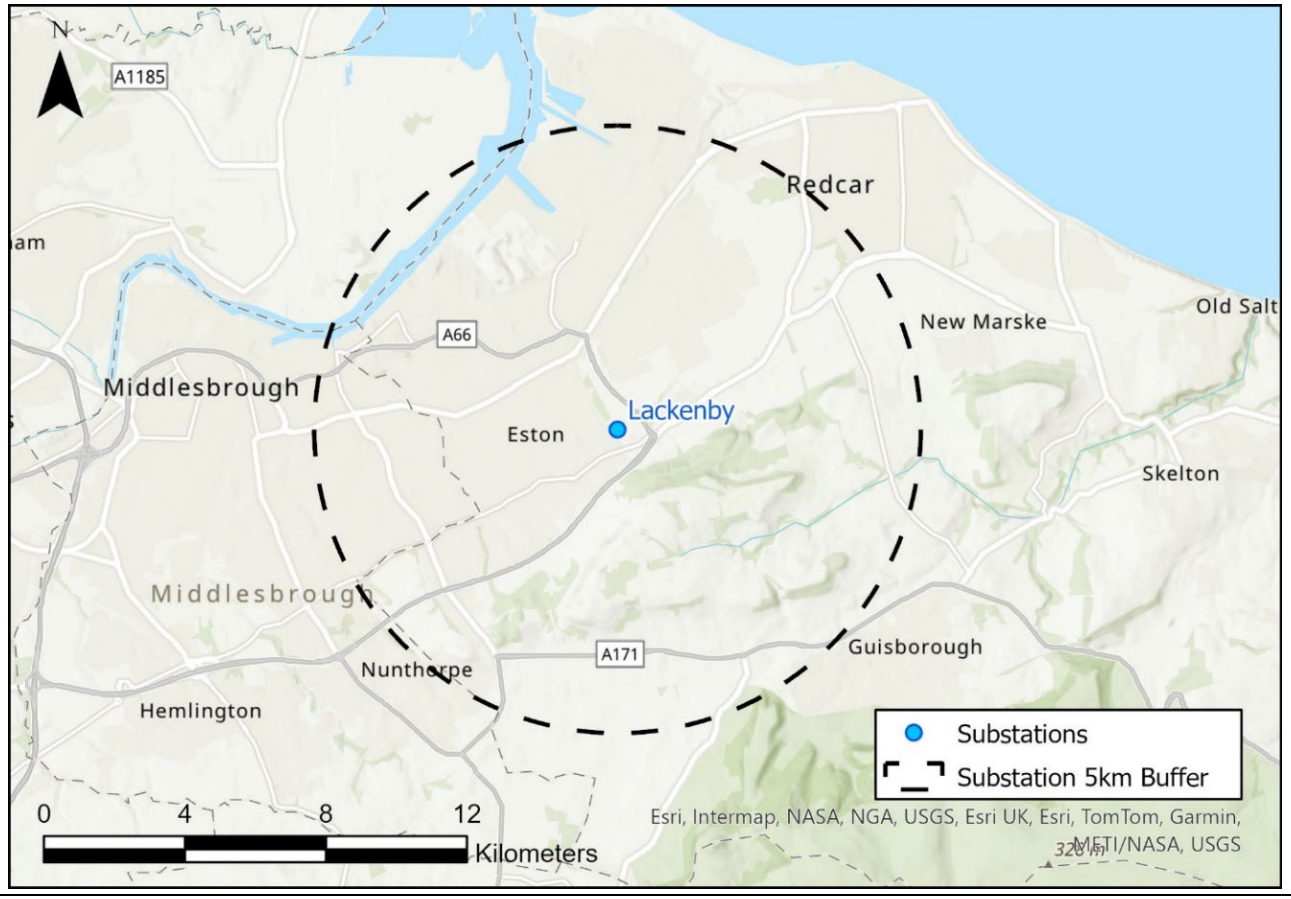


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are two SSSIs within the vicinity of Hunterston, namely Portencross Woods SSSI and Southannan Sands SSSI. There are areas of ancient woodland located throughout Hunterston. The SSSIs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas are mainly located in the south (West Kilbride) and north (Fairlie) of Hunterston interface area. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There is one SSSI, namely Southannan Sands SSSI, designated for geological interest. There is an area of upland located in the north-east and small areas of steeply sloping land. There are scattered areas of moderately sloping land located throughout Hunterston. The agricultural land is a mixture of Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), Class 6.1 (Land capable of use as rough grazings with a high proportion of palatable plants), Class 6.2 (Land capable of use as rough grazings with moderate quality plants) and Class 6.3 (Land capable of use as rough grazings with low quality plants). Other areas are urban. There is potential to avoid the SSSI and areas of prime agricultural land within the 5km buffer area, avoiding the potential for negative effects within the area. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are rivers and lakes located throughout Hunterston. There are a number of national flood zones located within Hunterston. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. There is potential for temporary, short-term negative effects on water quality during construction.				
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. There is potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for the burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. There is potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure, reducing the requirement for the burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas are mainly located in the north (Kilmarnock). There is an extensive road network throughout the area comprising B, minor, local, primary and restricted roads. There is a railway line within the east of Hunterston. There is a port located at Hunterston. There is a range of electrical transmission infrastructure within the surrounding area, including the Hunterston 400kV substation, Hunterston East 400kV substation, Hunterston North 400kV substation, Western HVDC 600kV Converter station and WHDC 525kV substation. There are 400kV overhead lines connecting into these substations. The Hunterston 'B' Nuclear Power Station is also located in the area. The urban areas, roads, railway line and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. There is potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+1	-1/+1	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 32 listed buildings in the study area. There are also seven scheduled monuments. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity The urban areas are mainly located in the south (West Kilbride) and north (Fairlie). The Ayrshire Coastal Path is located along the coastline. The urban areas and coastal path are within the study area, but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified, as there are no cumulative developments proposed as part of the HND within this Interface Area.				

Lackenby Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
Cenos	1 DC Developer Converter Station	No - INTOG
Overview of Interface Area		

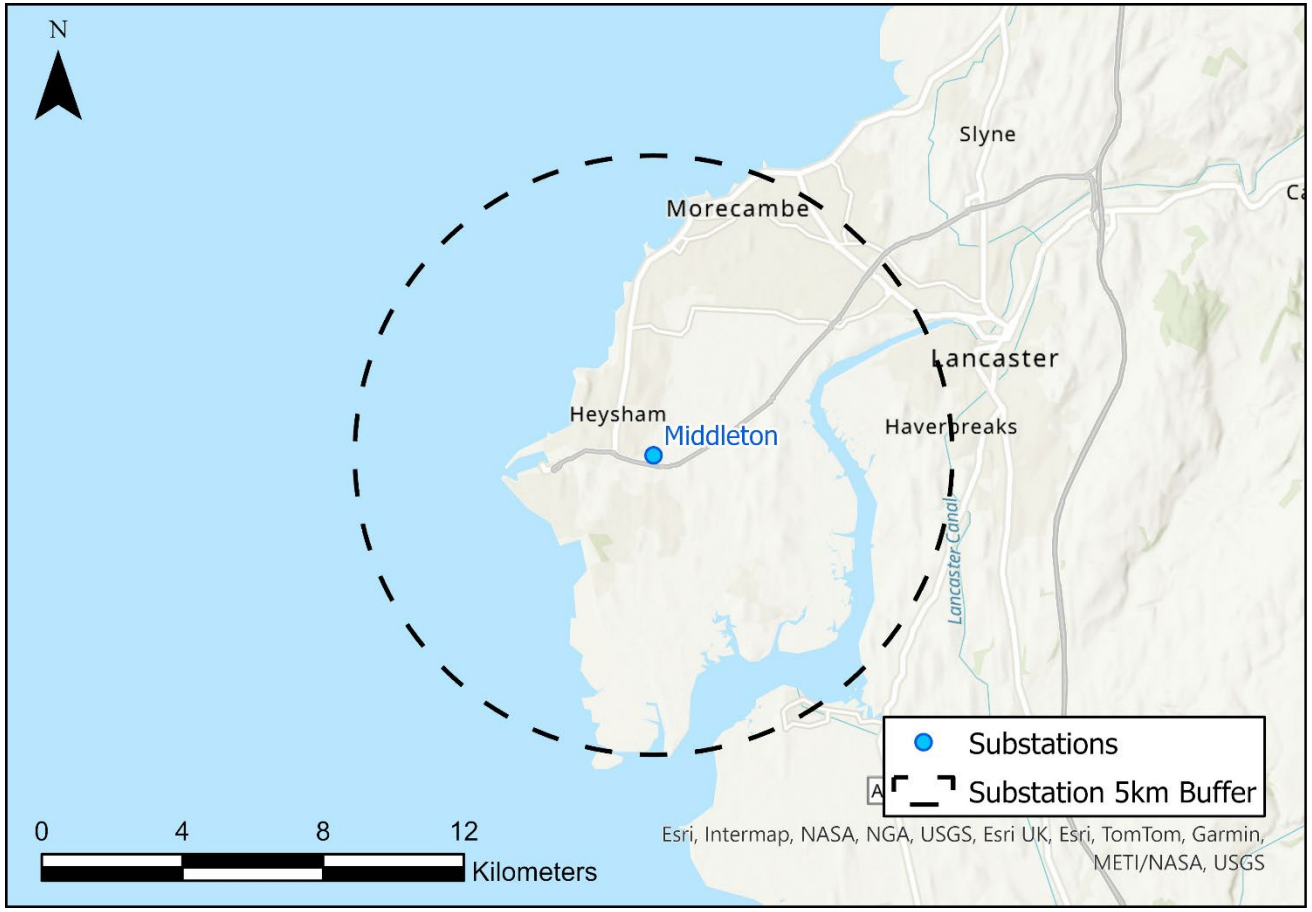


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna The Teesmouth and Cleveland Coast SPA/Ramsar/SSSI/IBA are located along the River Tees in the north of Lackenby. The Lovell Hill Pools SSSI is located in the south-east of Lackenby. The North Yorkshire Moors IBA is located in the south of Lackenby. There are areas of ancient woodland, located in the east of Lackenby. The SPA, Ramsar, SSSIs, IBAs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are large urban areas within Lackenby, including Redcar in the east and Eston in the west. There are smaller urban areas located throughout. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There is one SSSI, Teesmouth and Cleveland Coast SSSI, designated for its geological interest. There are 35 landfill sites located across Lackenby. There are upland areas and areas of moderately sloping land located in the south of Lackenby. The agricultural land is located in the south of Lackenby and is a mixture of Grade 2 (very good quality agricultural land), Grade 3 (good to moderate quality agricultural land), Grade 4 (poor quality agricultural land) and Grade 5 (very poor quality agricultural land). The north of Lackenby is predominantly urban. The sloping land, uplands, SSSI and prime agricultural land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water Rivers and lakes are located throughout the Lackenby study area, the most significant is the River Tees located in the north. There are National Flood Zones, along the rivers and their tributaries. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There are large urban areas within Lackenby, including Redcar in the east and Eston in the west. There is a road network throughout the area comprising A roads, B Roads, minor, local and restricted roads across Lackenby, predominantly concentrated in the north / north-west. There is a railway line in the north running west to east. There is electrical transmission infrastructure within the surrounding area, including a 400kV overhead line, a 400/275kV overhead line and two 275kV overhead lines. There are two 275kV cables, a 400kV cable and the Sofia and Dogger Bank export Cables. The Lackenby 400kV substation, Greystones 275kV Substation, Wilton 275kV substation, Grangetown 275kV Substation, Dogger Bank C Converter Station and Sofia Wind Farm Converter Station are located within the areas. The urban areas, roads, railway line and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are 130 listed buildings in the study area. There are 19 scheduled monuments within the 5km study area. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity There are large urban areas within Lackenby, including Redcar in the east and Eston in the west. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified as only assessed for one standalone route with no potential for cumulative effects with any other HND developments				

Middleton Onshore Interface Area		
Start Point	**Requirements**	**In Preferred Option (Y/N)**
R4_5	1 Developer AC substation	N – HND1
Overview of Interface Area		

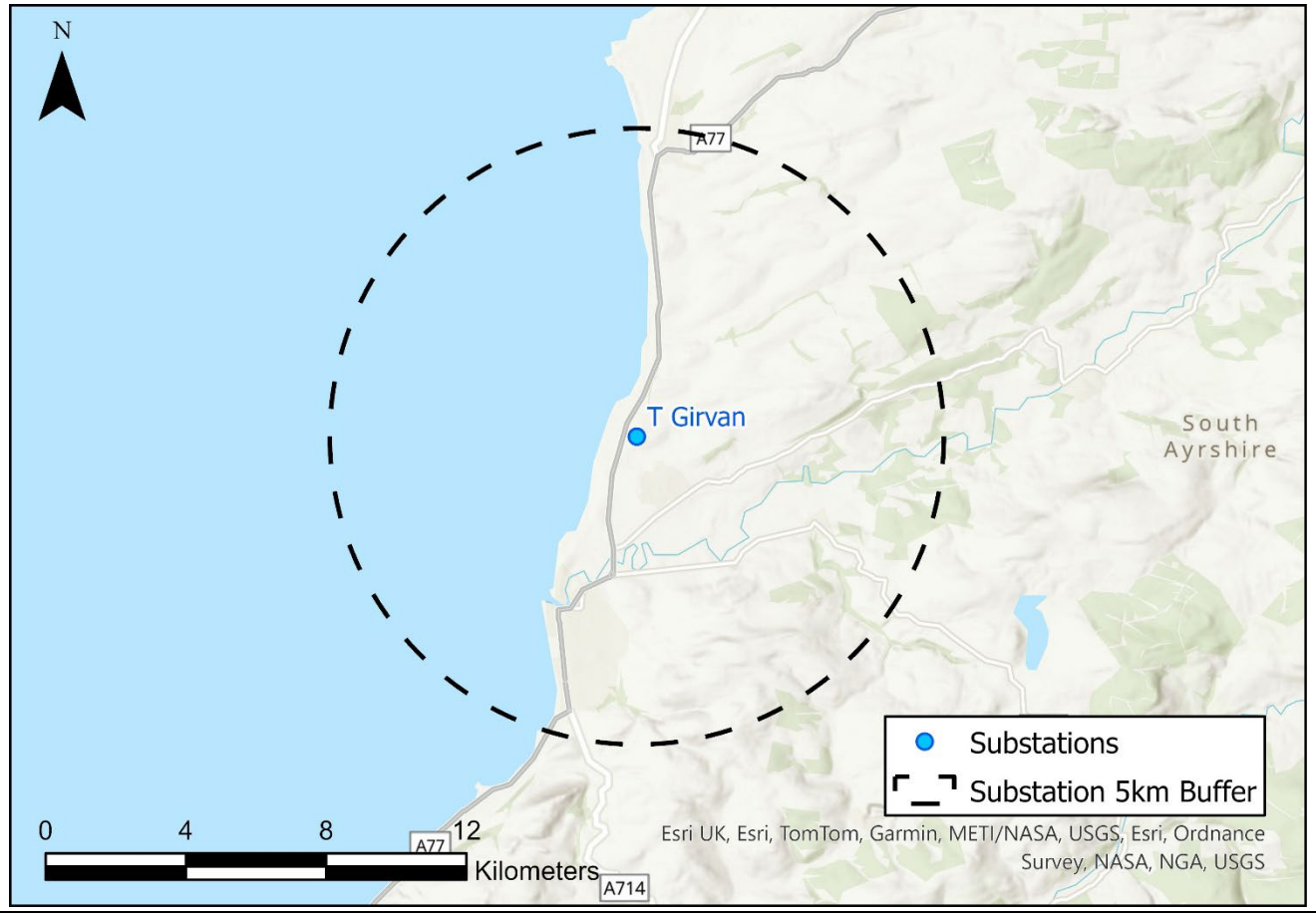


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There is an SAC located partially onshore, namely Morecambe Bay SAC. The Morecambe Bay and Duddon Estuary SPA is located partially onshore within the study area. The Morecambe Bay Ramsar and Morecambe Bay IBA are located within Middleton. There are three SSSIs within Middleton, namely Baker Scar SSSI, Heysham Moss SSSI and Lune Estuary SSSI. There is one area of ancient woodland, located within Middleton. The SAC, SPA, Ramsar, IBA, SSSIs and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health The urban areas are mainly located in the north (Heysham and Morecambe) and in the south (Overton), as well as some smaller villages located throughout. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+1	-1/+1	Indirect / Indirect
Geology, Soils and Land Use There is one SSSI within the vicinity of Middleton, namely Barker Scar SSSI, which is designated for geological interest. There are landfill sites located throughout Middleton. There are scattered areas of moderately sloping lands located throughout Middleton. The agricultural land is predominantly Grade 3 (Good to Moderate Quality Agricultural Land) with areas of Grade 4 (Poor Quality Agricultural Land) and Grade 5 (Very Poor Quality Agricultural Land). Other areas within the study area are Urban. There is limited potential to avoid the prime agricultural land, SSSI and landfill sites within the 5km buffer area; as such, potential for moderate effects on GSL cannot be avoided within the 5km buffer area. The SSSI and landfill sites within the study area can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water There are rivers and lakes located throughout Middleton, the most significant of which is the River Lune and its tributaries. There are a number of national flood zones located throughout Middleton and along the rivers. There is a large area benefitting from flood defences within Middleton. The rivers, lakes, flood zones and areas benefitting from flood defences within the study area can be avoided, avoiding the potential for	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
significant direct effects. There is potential for temporary, short-term negative effects on water quality during construction.				
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. There is potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+1	0/+1	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. There is potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure, reducing the requirement for the burning of fossil fuels and therefore GHG emissions.	-1	0/+1	0/+1	Direct / Indirect
Material Assets and Infrastructure The urban areas are mainly located in the north (Heysham and Morecambe) and in the south (Overton), as well as some smaller villages located throughout. There is an extensive road network throughout the area comprising A, B, minor, local and restricted roads. There is a railway line within the north of Middleton. There is a range of electrical transmission infrastructure within the surrounding area, including the Middleton 400kV substation, the Heysham 400kV substation and the West of Duddon Sands Wind Farm 400kV substation. There are 400kV and 132kV overhead lines connecting into these substations. The Heysham Nuclear Power Station 2433MW is also located in the area. The urban areas, roads, railway line, and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. There is potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+1	-1/+1	Direct / Indirect
Cultural, Architectural and Archaeological Heritage	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
There are 100 listed buildings in the study area. There are also three scheduled monuments. These listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. There is potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity The urban areas are mainly located in the north (Heysham and Morecambe) and in the south (Overton), as well as some smaller villages located throughout. The Heysham Head National Trust land is located in the north-west. The urban areas and national trust lands are within the study area, but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified, as there are no cumulative developments proposed as part of the HND within this Interface Area.				

Girvan Tee Onshore Interface Area		
Start Point	**Requirements**	**In Preferred Option (Y/N)**
SW_W1	Busbar station	N – HND1
Overview of Interface Area		

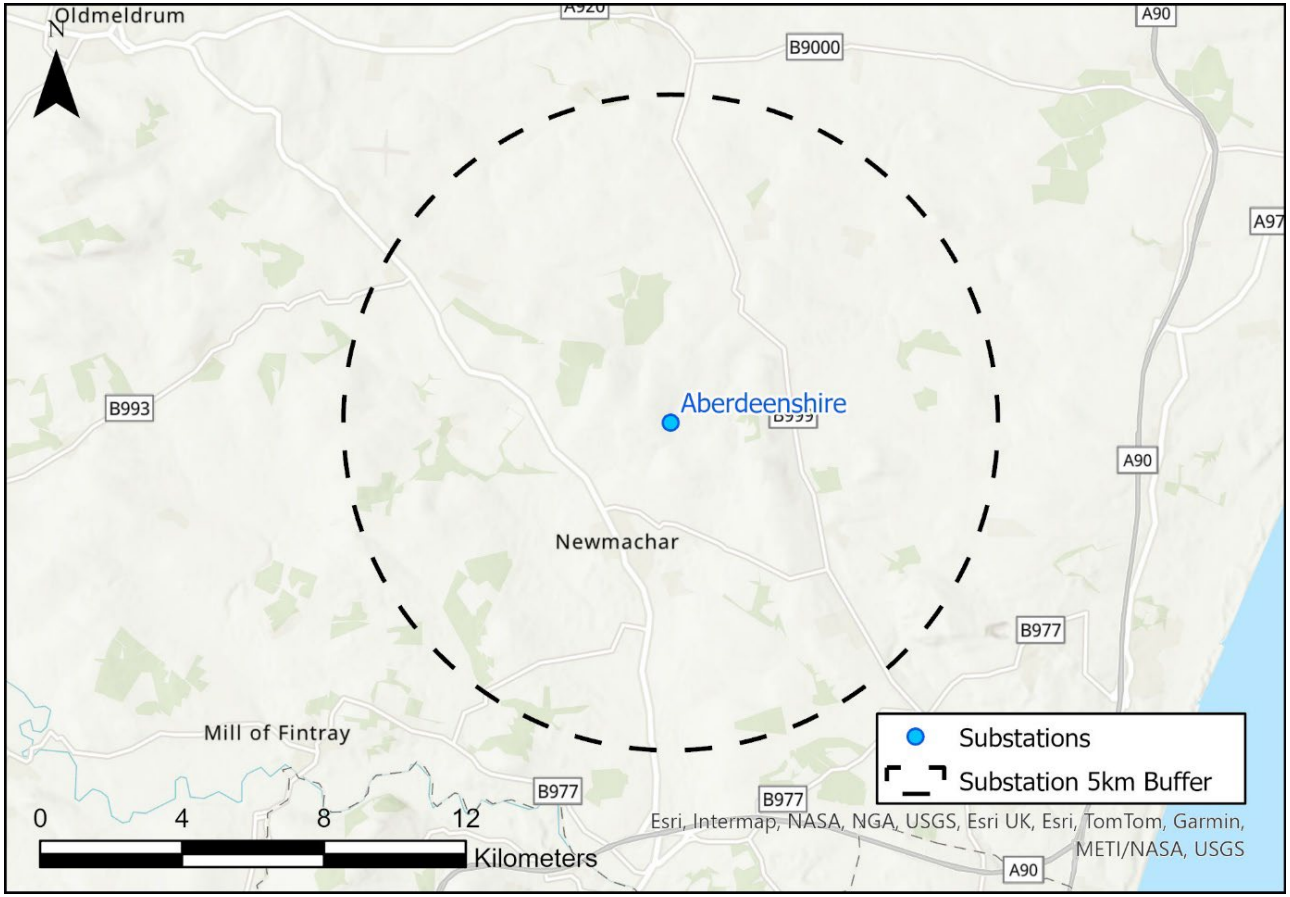


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are three SSSIs, namely Craighead Quarry SSSI, Penwhapple Burn SSSI and Turnberry Dunes SSSI. The entire area is located within the Galloway and Southern Ayr Biosphere Reserve. There are areas of ancient woodlands, predominantly located in the east of Girvan Tee. The SSSIs, Biosphere Reserve and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are urban areas located at Girvan within the study area. Any settlements/urban areas within the 5km buffer area can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are three SSSIs, namely Craighead Quarry SSSI, Penwhapple Burn SSSI and Turnberry Dunes SSSI, designated for geological interest. There are some areas of upland and steeply sloping land located in the south-east and areas of moderately sloping land located throughout Girvan Tee. The agricultural land is a mixture of Class 2 (Land capable of producing a wide range of crops), Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), Class 4.1 (Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal), Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops), Class 5.1 (Land capable of use as improved grassland. Few problems with pasture establishment and maintenance and potential high yields), Class 5.2 (Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain), Class 5.3 (Land capable of use as improved grassland. Pasture deteriorates quickly) and Class 6.1 (Land capable of use as rough grazings with a high proportion of palatable plants). There is potential to avoid the SSSIs, and areas of prime agricultural land within the 5km buffer area, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Water There are rivers and lakes located throughout Girvan Tee, the most significant of which is the Water of Girvan and its tributaries. There are a number of national flood zones located along the rivers within Ballantrae. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. There is potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. There is potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. There is potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure, reducing the requirement for the burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There are urban areas located at Girvan within the study area There is an extensive road network throughout the area comprising B, minor, local, primary and restricted roads. There is a railway line within the south and east of the area. The urban areas, roads and railway line are within the study area, but can be avoided, avoiding the potential for significant direct effects. There is potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. There is potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+1	-1/+1	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There is one Garden and Designed Landscape located in the east of Girvan Tee. There are 91 listed buildings in the study area. There are also ten scheduled monuments. These Gardens and Designed Landscapes,	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
listed buildings, and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. There is potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity There are urban areas located at Girvan within the study area. The Ayrshire Coastal Path is located in the west of Ballantrae. The urban areas and Ayrshire Coastal Path are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified, as there are no cumulative developments proposed as part of the HND within this Interface Area.				

Aberdeenshire Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
Aspen	1 Developer DC Converter Station	No - INTOG
Overview of Interface Area		

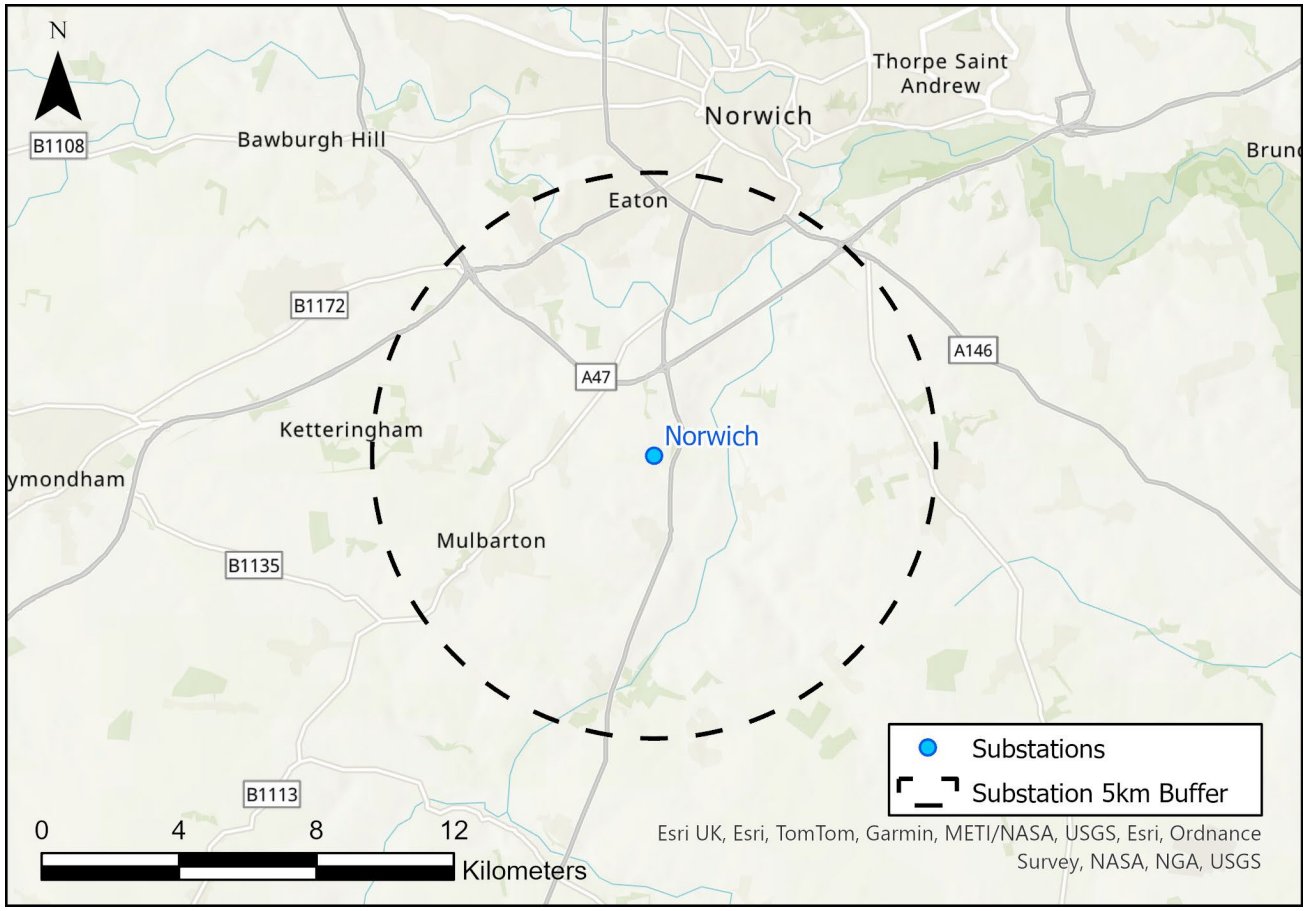


Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are areas of ancient woodland located throughout Aberdeenshire, predominantly in the west. The areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are urban areas located in the south (Newmachar and Kingseat), whilst there are some smaller villages located throughout Aberdeenshire. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are areas of moderately sloping land throughout Aberdeenshire, predominantly in the west, centre and south-east. The agricultural land is a mixture of Class 3.1 (Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common), Class 3.2 (Land capable of average production though high yields of barley, oats and grass can be obtained. Grass leys are common), with smaller areas of Class 4.2 (Land capable of producing a narrow range of crops, primarily on grassland with short arable breaks of forage crops) and Class 6.2 (Land capable of use as rough grazings with moderate quality plants). The sloping land and areas of prime agricultural land are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-1	-1	-1	Direct & Indirect
Water There are a number of rivers and lakes located throughout Aberdeenshire, including the Elrich Burn in the south-west, the Tarty Burn in the north-east and the Foveran Burn in the east. There are National Flood Zones located along river/stream channels in the north-east, east and south-west. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There are urban areas are located in the south (Newmachar and Kingseat), whilst there are some smaller villages located throughout Aberdeenshire. There is a road network throughout the area comprising A roads, B roads, minor, local, and restricted roads. There is electricity transmission infrastructure within Aberdeenshire, including three pairs of 275kV overhead lines which cross the south-east, south-west and north. The urban areas, roads and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 18 listed buildings throughout Aberdeenshire, which are predominantly located in the west. There are five scheduled monuments within Aberdeenshire, three are located in the south-west, one in the north-west and one in the north-east. The Straloch Garden and Designed Landscape is located in the west. These listed buildings, scheduled monuments and Garden and designed landscape can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Landscape / Seascape and Visual Amenity There are urban areas are located in the south (Newmachar and Kingseat), whilst there are some smaller villages located throughout Aberdeenshire. The Formantine and Buchan Way National Trail is located through the centre of Aberdeenshire in a north-south orientation. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified as only assessed for one standalone route with no potential for cumulative effects with any other HND developments				

Norwich Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
SW_E1c_1	1 DC Developer Converter Station	No - HNDFUE
SW_E1c_2	1 DC Developer Converter Station	No - HNDFUE
Overview of Interface Area		



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are three SSSIs within the Norwich study area, namely Caistor St. Edmund Chalk Pit SSSI, Easton Chalk Pit SSSI and Shotesham Common SSSI. There is an area of ancient woodland located in the east. The SSSIs and area of ancient woodlands are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-1	-1	-1	Direct & Indirect
Population and Human Health There are urban areas including Norwich, Swardeston, Mulbarton, Newton Flotman, Shotesham, Stoke Holy Cross and Poringland. The urban areas/settlements are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for indirect negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are two SSSIs within Norwich, namely Caistor St. Edmund Chalk Pit SSSI and Easton Chalk Pit SSSI, which are designated for their geological interest. There are 10 landfill sites located in the study area. There are small areas of moderately sloping land within the study area. The agricultural land is predominantly Grade 3 (Good to Moderate Quality Agricultural Land) with areas of Grade 2 (Very Good Quality Agricultural Land) and Grade 4 (poor quality agricultural land). There are areas of non-agricultural land and urban areas in the north. There is limited scope to avoid the areas of prime agricultural land within the 5km buffer area, as such, potential for moderate effects on GSL cannot be avoided within the interface 5km buffer area. The SSSIs and landfills are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct & Indirect
Water Rivers and lakes are located throughout the Norwich study area, the most significant of which are the surface waters of the River Yare and River Tas. There are National Flood Zones are located along the River Yare, River Tas and their tributaries. The rivers, lakes and National Flood Zones within the	-1	0	0	Direct

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.				
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure There are urban areas including Norwich, Swardeston, Mulbarton, Newton Flotman, Shotesham, Stoke Holy Cross and Poringland. There is an extensive road network throughout the area comprising A roads, B roads and primary roads. There are two railway lines within the study area. There is transmission infrastructure in the area, including two 400kV overhead lines and four 132kV overhead lines. The Norwich Main 400KV Substation and Trowse Grid 132kV Substation are located within the area. The urban areas, roads, railway lines and transmission infrastructure are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for indirect short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1/+1	-1/+2	-1/+2	Direct / Indirect
Cultural, Architectural and Archaeological Heritage There are 225 listed buildings in the study area. There are also 15 scheduled monuments in the study area, which are located predominantly in the north-east. The Intwood Hall Park and Garden is located in the north-west. These listed buildings, scheduled monuments and parks and gardens	-1	0	0	Direct & Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.				
Landscape / Seascape and Visual Amenity There are urban areas including Norwich, Swardeston, Mulbarton, Newton Flotman, Shotesham, Stoke Holy Cross and Poringland. The urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-1	-1	-1	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified as only assessed for standalone routes with no potential for cumulative effects with any other HND developments				

Pembroke Onshore Interface Area		
Start Point	**Requirements**	**In Recommended Design (Y/N)**
PDA 1	1 Developer AC Substation	No – HND Celtic Sea
Overview of Interface Area		



Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
Biodiversity, Flora and Fauna There are three SACs, namely Limestone Coast of South West Wales SAC, located in the south-west of Pembroke, the Pembrokeshire Bat Sites and the Bosherton Lakes SAC, which is located in the south-east of Pembroke and the Pembrokeshire Marine SAC, which encompasses a large area across the north of Pembroke associated with the Milford Haven Waterway. There are NRW habitats which are highly sensitive to cabling located within the Milford Haven Estuary. These include the estuary itself, large shallow inlets and bays, intertidal boulder communities, mudflats and sandflats not covered by sea water at low tide, Atlantic Salt Meadows, Egg Wrack, Ostrea edulis beds, Reefs and Seagrass beds. The Castlemartin Coast SPA is located within the south-east of Pembroke. There are six SSSIs, namely Arfordir Penrhyn Angle/Angle Peninsula Coast SSSI, Broomhill Burrows SSSI, Gweunydd Somerton Meadows SSSI, Afon Cleddau Dwyreiniol/Eastern Cleddau River SSSI, Orielton Stable Block and Cellars SSSI, and Scoveston Fort SSSI, located within Pembroke encompassing the Daugleddau Estuary as well as areas in the west, south-west and south-east. There are areas of ancient woodlands scattered across Pembroke, mainly concentrated in the south-east. The SACs, SPA, SSSIs, NRW Key Sensitive Habitats and areas of ancient woodland are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for direct or indirect loss, damage or disturbance to habitats and species outside designated sites in the short to long-term.	-2	-2	-2	Direct & Indirect
Population and Human Health The urban areas of Milford Haven and Neyland are situated to the north of the Estuary, while Pembroke and Pembroke Dock are located to the south. The settlements/urban areas are within the 5km buffer area, but can be avoided, avoiding the potential for significant direct effects. There is potential for negative effects on the local population in the short, medium and long-term. Potential for positive effects from the facilitation of new renewable energy infrastructure.	-1	-1/+2	-1/+2	Indirect / Indirect
Geology, Soils and Land Use There are two SSSIs designated for geology/geomorphology, namely Arfordir Penrhyn Angle/Angle Peninsula Coast SSSI and Scoveston Fort SSSI. There are three landfall sites within Pembroke. There are areas of moderately sloping land across Pembroke. The agricultural land is a mixture of Class 2 (Very Good Quality Agricultural Land), Class 3a (Good Quality Agricultural Land) and Class 3b (Moderate Quality Agricultural Land), Class 4 (Poor Quality Agricultural Land) and Class 5 (Very Poor Quality Agricultural Land). Other areas within the study area are Urban and Non-Agricultural Land. The SSSIs, landfill sites, and prime	-1	-1	-1	Direct & Indirect

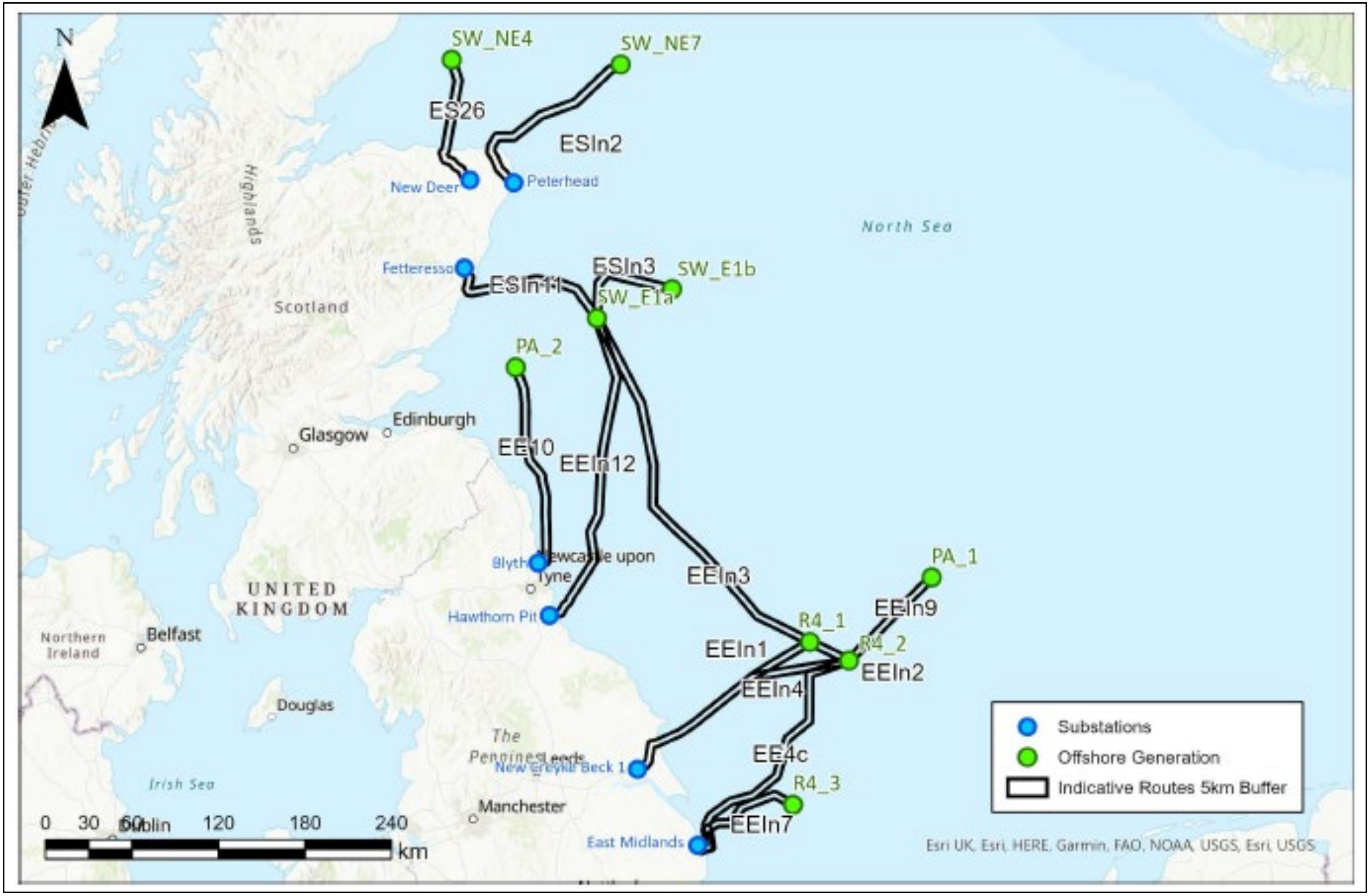
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
agricultural land are within the 5km buffer area but can be avoided, avoiding the potential for significant direct effects. There is potential for long-term negative effects due to loss of soils and long-term effects in the footprint of infrastructure.				
Water Rivers and lakes are located throughout Pembroke, the most significant of which are the surface waters of the Daugleddau Estuary/ the Milford Haven Waterway. There are a number of national flood zones across Pembroke. The rivers, lakes and flood zones within the study area can be avoided, avoiding the potential for significant direct effects. Potential for temporary, short-term negative effects on water quality during construction.	-1	0	0	Direct
Air There is unlikely to be any significant negative effects on air quality within the study area. There is the potential for short-term, temporary negative effects on air quality, due to dust generation and air emissions from vehicles and machinery in the vicinity of the works, during construction and maintenance activities. Potential for positive effects on national and regional air quality from the facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore anthropogenic pollution.	-1	0/+2	0/+2	Direct / Indirect
Climatic Factors There is unlikely to be any significant negative effects on climatic factors within the study area. Potential for short-term, temporary negative effects from GHG emissions during construction, from materials and transport, and from maintenance activities. Potential for positive effects from facilitation of new renewable energy infrastructure, reducing the requirement for burning of fossil fuels and therefore GHG emissions.	-1	0/+2	0/+2	Direct / Indirect
Material Assets and Infrastructure The urban areas of Milford Haven and Neyland are situated to the north of the Estuary, while Pembroke and Pembroke Dock are located to the south. There is an extensive road network throughout the area comprising A, B, minor, local and restricted roads, however, the road network is sparser in the south of Pembroke. There is one multi-track and one single-track railway line located in the north and the north-east, respectively. There are three areas of port lands, two situated at Milford Haven in the north-west and one located at Pembroke Dock in the north-east. There are two onshore military areas within the study area, one is a barracks located in Pembroke, and one is the Castlemartin Range (danger area) located in	-1/+1	-1/+2	-1/+2	Direct / Indirect

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect
the south. There is a range of electrical transmission infrastructure within the surrounding area, including the Pembroke 132kV Substation to the west of the 400kV Substation, and two 400kV OHLs located across the south-west of the area connecting to the Pembroke 400kV substation The urban areas, roads, railways, port lands, military areas and major onshore utilities are within the study area but can be avoided, avoiding the potential for significant direct effects. Potential for short-term, temporary negative effects from localised disruption of other users or assets during construction and maintenance activities. Potential for positive effects from the facilitation of new renewable energy infrastructure.				
Cultural, Architectural and Archaeological Heritage There is one registered Park and Garden, Orielton, located in the south-west. There are 331 listed buildings concentrated in Milford Haven in the north-east, Pembroke/Pembroke Dock in the east and scattered across the south-east. There are also 24 scheduled monuments, which are mainly located across the south-east and east, with some situated along the Estuary and a couple in the north. These, Parks and Gardens, listed buildings and scheduled monuments can be avoided, avoiding the potential for significant direct effects. There is unlikely to be any significant negative effects on heritage features identified within the study area. Potential for short-term, indirect negative effects on the setting of heritage features, or direct effects on previously undiscovered features during construction.	-1	0	0	Direct & Indirect
Landscape / Seascape and Visual Amenity The urban areas of Milford Haven and Neyland are situated to the north of the Estuary, while Pembroke and Pembroke Dock are located to the south. The Pembrokeshire Coast National Park is located in the west. The Pembrokeshire Coast National Trail is also located in the area. The National Park, National Trail and urban areas are within the study area but can be avoided, avoiding the potential for significant direct effects on visual amenity. There is unlikely to be any significant negative effects on landscape and visual amenity within the study area. There is the potential for short-term, negative effects on landscape and views during construction and long-term effects from the presence of electrical transmission infrastructure during operation.	-2	-2	-2	Indirect
Cumulative and in combination issues				
No cumulative and in combination issues identified as only assessed for one standalone route with no potential for cumulative effects with any other HND developments				

F.3 SEA Light Assessment of Options

F.3.1 HND1 Options

HND1 – East Coast Option A Preferred Coordinated			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**Preferred Option (Y/N)**
1524km	1369km	155km	No
Routes Included in Design and Capacity			
There are 13 routes included in this design: R4_1 to SW_E1a (EEIn3) (1.8GW); R4_1 To R4_2 (EEIn2) (1.5GW); R4_1 to Creyke Beck (EEIn1) (1.8GW); R4_2 to Creyke Beck (EEIn4) (1.8GW); R4_2 to Lincolnshire Connection Node (EE4c) (1.8GW); R4_2 to PA_1 (EEIn9) (1.43GW); R4_3 to Lincolnshire Connection Node (EEIn7) (1.5GW); PA_2 to Blyth (EE10) (1.8GW); SW_E1a to SW_E1b (ESIn3) (1.2GW); SW_E1a to Hawthorn Pit (EEIn12) (1.8GW); SW_E1a to Fetteresso (ESIn11) (2GW); SW_NE7 to Peterhead1 (ESIn2) (1GW); SW_NE4 to New Deer (ES26) (2GW).			
Design Description			
This is the published preferred option for this region. It connects SW_NE4 to New Deer, SW_NE7 to Peterhead1, PA_2 to Blyth and R4_3 to Lincolnshire Connection Node substations radially as an onshore TO interface point. The other wind farms are connected through a coordinated design. SW_E1b to SW_E1a offshore platform and PA_1 to R4_2 offshore platform, connect radially but to offshore interface points. SW_E1a connects to onshore TO interface points at Fetteresso and Hawthorn Pit. It also connects to R4_1 and Creyke Beck through a multi-terminal HVDC link. Finally, R4_2 connects to Creyke Beck and Lincolnshire Connection Node onshore TO interface points while connecting to R4_1 offshore.			


N
SW_NE4
SW_NE7
ES26
ESIn2
New Deer
Peterhead
North Sea
Highlands
Fetteresso
ESIn3
SW_E1b
ESIn11
SW_E1a
Scotland
PA_2
Edinburgh
Glasgow
EE10
EEIn12
Blyth
Newcastle upon Tyne
EEIn3
PA_1
EEIn9
UNITED KINGDOM
Hawthorn Pit
R4_1
R4_2
EEIn1
EEIn2
Northern Ireland
Belfast
EEIn4
Douglas
The Pennines
Leeds
New Creyke Beck 1
EE4c
R4_3
Irish Sea
Manchester
EEIn7
East Midlands
Substations
Offshore Generation
Indicative Routes 5km Buffer
0 30 60 120 180 240
km
Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are designated sites that cannot be avoided by cable routes within the option. The Dogger Bank SAC (designated for sublittoral sandbank habitat), Southern North Sea SAC (designated for harbour porpoise), Southern Trench MPA (protected features include burrowed mud communities, fronts, shelf deeps and minke whale), Durham Coast SAC (designated for vegetated sea cliffs) and Durham Coast SSSI, Berwickshire and North Northumberland Coast SAC (designated for large shallow inlets and bays, mudflats and sandflats, reefs sea caves), Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern), Holderness Offshore MCZ (designated subtidal coarse and mixed sediment, subtidal sand, North Sea glacial tunnel valleys and Ocean quahog), Holderness Inshore MCZ (designated for muds, sands, rock and coarse and mixed sediments), Berwick to St Mary's MCZ (designated for common eider), Coquet to St Marys MCZ (designated for rock and sediment communities on the shoreline and on the seabed), and Rosehearty to Fraserburgh Coast SSSI (designated for non-breeding Curlew, Eider, Turnstone and Purple sandpiper) cannot be avoided within the route corridors. The Dogger Bank SAC has been identified as sensitive to pressures associated with cabling activities; however, cables routes cannot be avoided within the site as there are three offshore generation sites located within the SAC. The Southern Trench also has features sensitive to cabling; the site cannot be avoided but the trench area is avoidable. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, such as indirect damage to habitats sedentary species and disturbance and displacement of mobile species. This includes the Firth of Forth Banks MPA. There is potential for direct and indirect effects on other sensitive features that are within the 5km indicative route corridors and cannot be avoided, including Annex I reef and	-3	-2	-2	Direct & Indirect	Yes

sandbank, and the Smithic Bank sandbank. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	-1/+2	-1/+2	Indirect / Indirect	Yes
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL, as there are no unavoidable sensitivities of significance. There is potential for direct and indirect effects on areas of sensitive Annex I reef and sandbank that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure and areas of primarily very good and good quality agricultural land that are within the route corridors that cannot be avoided (-2).	-2	0	0	Direct & Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A)	-1	-1/+2	-1/+2	Indirect / Indirect	Yes

There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).					
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	-1/+2	-1/+2	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There are no unavoidable sensitivities of significance. In general, there is potential for short-term direct and indirect effects on unavoidable material assets and infrastructure, including offshore infrastructure (including the Viking Interconnector), military areas and areas of high fishing density, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect	Yes
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks and scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during	-1	0	0	Direct & Indirect	Yes

the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).					
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). Generally, the landscape types in the vicinity of existing substations and proposed areas are of relatively low sensitivity to development (e.g., due to urban nature, elements of landscape screening), the Lincolnshire Connection Node area is likely to be of higher sensitivity to development.	-2	-2	-2	Indirect	No

HND1 – East Coast Option B Alternative Coordinated			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**Preferred Option (Y/N)**
1837km	1717km	119km	No
Routes Included in Design and Capacity			
There are 13 routes included in this design: R4_1 to SW_E1a (EEIn3) (1.8GW); R4_1 To R4_2 (EEIn2) (1.5GW); R4_1 to Creyke Beck (EEIn1) (1.8GW); R4_2 to Creyke Beck (EEIn4) (1.8GW); R4_2 to Lincolnshire Connection Node (EE4c) (1.8GW); R4_2 to PA_1 (EEIn9) (1.32GW); R4_3 to Lincolnshire Connection Node (EEIn7) (1.5GW); PA_2 to Blyth (EE10) (1.8GW); SW_E1a to SW_E1b (ESIn3) (1.2GW); R4_2 to SW_E1a (EEIn19) (1.8GW); SW_E1a to Fetteresso (ESIn11) (2GW); SW_NE7 to SW_E1a (ESIn9a) (1GW); SW_NE4 to New Deer (ES26) (2GW).			
Design Description			
This is the published alternative coordinated option for this region. It connects SW_NE4 to New Deer, PA_2 to Blyth and R4_3 to East Midland substations radially. The other wind farms are connected through a coordinated design. SW_E1b and SW_NE7 to SW_E1a offshore platform and PA_1 to R4_2 offshore platform, connect radially but to offshore interface points. SW_E1a connects to an onshore TO interface point at Fetteresso. It also connects to R4_1, R4_2 offshore platforms and Creyke Beck substation through two multi-terminal HVDC links. Finally, R4_2 connects to Lincolnshire Connection Node onshore TO interface point while connecting to R4_1 offshore platform.			


N
SW_NE4
SW_NE7
ES26
ESIn9a
New Deer
North Sea
Highlands
Fetteresso
ESIn11
ESIn3
SW_E1b
SW_E1a
Scotland
PA_2
Edinburgh
Glasgow
EE10
Blyth
Newcastle upon Tyne
UNITED KINGDOM
EEIn19
EEIn3
PA_1
EEIn9
R4_1
R4_2
EEIn1
EEIn2
EEIn4
Northern Ireland
Belfast
Douglas
The Pennines
Leeds
New Creyke Beck 1
EE4c
R4_3
Irish Sea
Manchester
EEIn7
East Midlands
Substations
Offshore Generation
Indicative Routes 5km Buffer
0 30 60 120 180 240
km
Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

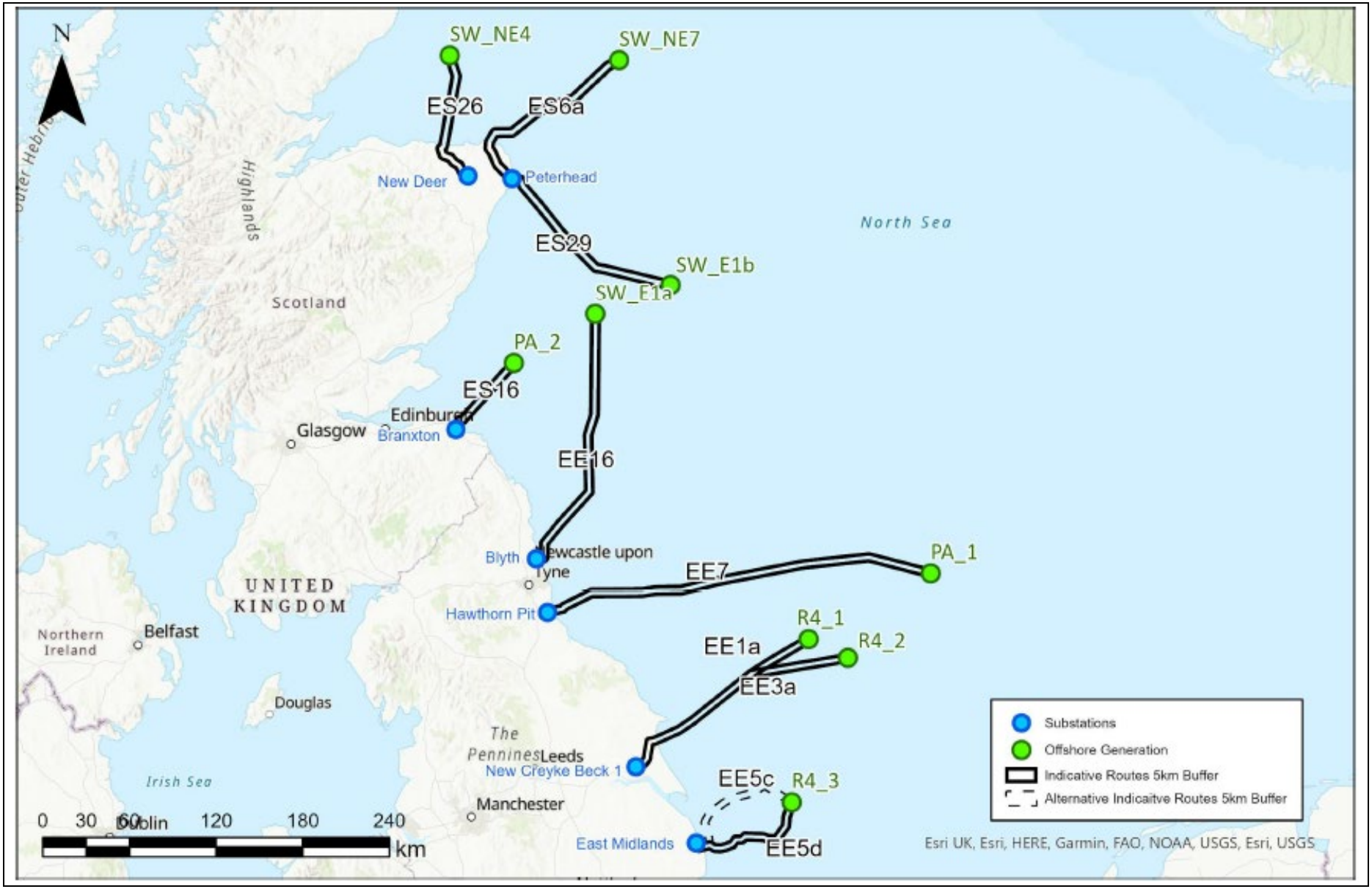
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are designated sites that cannot be avoided by cable routes within the option. The Dogger Bank SAC (designated for sublittoral sandbank habitat), Southern North Sea SAC (designated for harbour porpoise), Berwickshire and North Northumberland Coast SAC (designated for large shallow inlets and bays, mudflats and sandflats, reefs sea caves), Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern), Holderness Offshore MCZ (designated subtidal coarse and mixed sediment, subtidal sand, North Sea glacial tunnel valleys and Ocean quahog), Holderness Inshore MCZ (designated for muds, sands, rock and coarse and mixed sediments), Berwick to St Mary's MCZ (designated for common eider), and Coquet to St Marys MCZ (designated for rock and sediment communities on the shoreline and on the seabed) cannot be avoided within the route corridors. The Dogger Bank SAC has been identified as sensitive to pressures associated with cabling activities; however, cables routes cannot be avoided within the site as there are three offshore generation sites located within the SAC. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, such as indirect damage to habitats sedentary species and disturbance and displacement of mobile species. This includes the Firth of Forth Banks MPA and the Outer Firth of Forth and St Andrews Bay Complex MPA. There is potential for direct and indirect effects on other sensitive features that are within the 5km indicative route corridors and cannot be avoided, including Annex I reef and sandbank, and the Smithic Bank sandbank. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2).	-3	-2	-2	Direct & Indirect	Yes

In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	-1/+2	-1/+2	Indirect / Indirect	Yes
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL, as there are no unavoidable sensitivities of significance. There is potential for direct and indirect effects on areas of sensitive Annex I reef and sandbank that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure and areas of primarily very good and good quality agricultural land that are within the route corridors that cannot be avoided (-2).	-2	0	0	Direct & Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works	-1	-1/+2	-1/+2	Indirect / Indirect	Yes

during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).					
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	-1/+2	-1/+2	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore infrastructure (cable and pipeline crossings), military firing areas and areas of high shipping density (-2). There is also potential for short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities, including existing offshore wind farms, a port, spoil dumping sites and offshore oil and gas diffusers. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect	Yes
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There are wrecks and scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities,	-1	0	0	Direct & Indirect	Yes

and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).					
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). Generally, the landscape types in the vicinity of existing substations and proposed areas are of relatively low sensitivity to development (e.g., due to urban nature, elements of landscape screening), the Lincolnshire Connection Node area is likely to be of higher sensitivity to development.	-2	-2	-2	Indirect	No

HND1 – East Coast Option C Preferred Radial			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**Preferred Option (Y/N)**
1323km	1189km	133km	No
Routes Included in Design and Capacity			
There are nine routes included in this design: R4_1 to New Creyke Beck (EE1a) (1.5GW); R4_2 to New Creyke Beck (EE3a) (1.5GW); R4_3 to Lincolnshire Connection Node (EE5d) (1.5GW); PA_1 to Hawthorn Pit (EE7) (1.32GW); PA_2 to Branxton (ES16) (1.8GW); SW_E1a to Blyth (E16) (1.5GW); SW_E1b to Peterhead1 (ES29) (1.2GW); SW_NE4 to New Deer (ES26) (2GW); SW_NE7 to Peterhead1 (ES6a) (1GW).			
Design Description			
This is the published preferred alternative radial option for this region. It connects PA_2 to Branxton, SW_E1a to Blyth, SW_E1b and SW_NE7 to Peterhead1, and SW_NE4 to New Deer. PA_1 connects to Hawthorn Pit. The radial design also connects both R4_1 and R4_2 to the new Creyke Beck substation, and R4_3 connects to Lincolnshire Connection Node These are all AC cables except for the connection from SW_E1a to Blyth and the connection from PA_1 to Hawthorn Pit, which are HVDC cables due to their length.			


N
SW_NE4
SW_NE7
ES26
ES6a
New Deer
Peterhead
North Sea
ES29
SW_E1b
SW_E1a
Scotland
PA_2
ES16
Edinburgh
Glasgow
Branxton
EE16
Blyth
Newcastle upon Tyne
PA_1
EE7
UNITED KINGDOM
Hawthorn Pit
R4_1
R4_2
EE1a
EE3a
Northern Ireland
Belfast
Douglas
The Pennines
Leeds
New Creyke Beck 1
Irish Sea
EE5c
R4_3
Manchester
Dublin
East Midlands
EE5d
0 30 60 120 180 240
km
Substations
Offshore Generation
Indicative Routes 5km Buffer
Alternative Indicaitve Routes 5km Buffer
Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

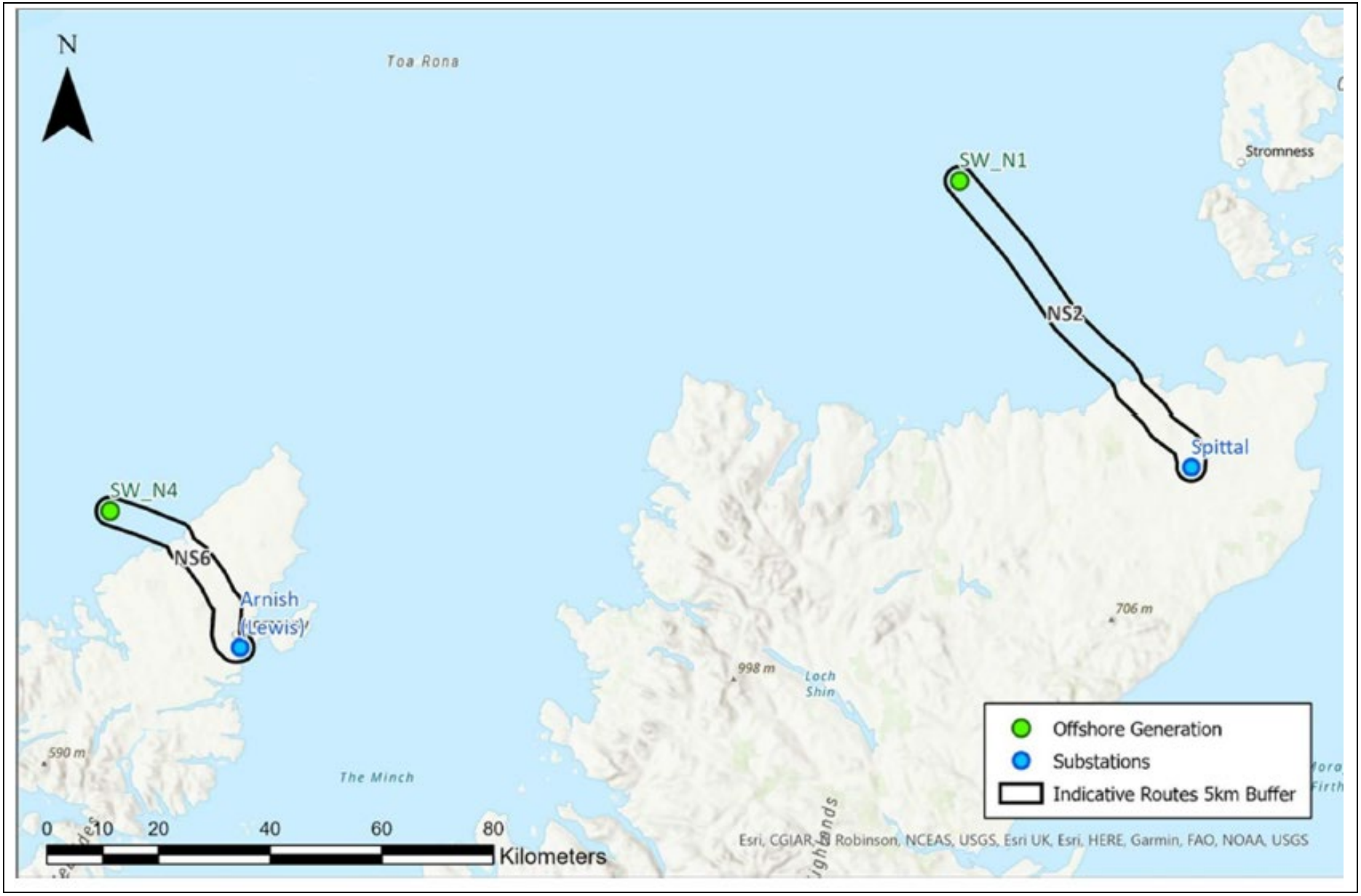
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are designated sites that cannot be avoided by cable routes within the option. The Dogger Bank SAC (designated for sublittoral sandbank habitat), Firth of Forth Complex MPA and Outer Firth of Forth and St Andrews Bay Complex MPA, Southern Trench MPA (protected features include burrowed mud communities, fronts, shelf deeps and minke whale), Durham Coast SAC (designated for vegetated sea cliffs) and Durham Coast SSSI, Berwickshire and North Northumberland Coast SAC (designated for large shallow inlets and bays, mudflats and sandflats, reefs sea caves), Inner Dowsing, Race Bank and North Ridge SAC, Northumberland Marine SPA, Buchan Ness to Collieston Coast SPA, Berwick to St Mary's MCZ (designated for common eider), Coquet to St Marys MCZ (designated for rock and sediment communities on the shoreline and on the seabed), Northumberland Coast SSSI, and Rosehearty to Fraserburgh Coast SSSI (designated for non-breeding Curlew, Eider, Turnstone and Purple sandpiper) cannot be avoided within the route corridors. The Dogger Bank SAC has been identified as sensitive to pressures associated with cabling activities; however, cables routes cannot be avoided within the site as there are offshore generation sites located within the SAC. The Southern Trench SAC, and MCZs of Berwick to St Mary's and Coquet to St Marys MCZ also have features sensitive to cabling. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, such as indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features that are within the 5km indicative route corridors and cannot be avoided, including Annex I reef. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2).	-3	-2	-2	Direct & Indirect	Yes

In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are major settlements and urban areas within route corridors of the option, including Seaham, Dawdon, Murton, South Hetton, Easington Lane, Blyth, Bedlington, Sutton on Sea, Sandilands, Long Riston, Skirlaugh, Woodmansey and Kingswood and Hornsea; however, these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	-1/+2	-1/+2	Indirect / Indirect	Yes
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL, as there are no unavoidable sensitivities of significance. There is potential for direct and indirect effects on areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure and areas of primarily very good and good quality agricultural land that are within the route corridors that cannot be avoided (-2).	-2	0	0	Direct & Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A)	-1	-1/+2	-1/+2	Indirect / Indirect	Yes

There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).					
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	-1/+2	-1/+2	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable, and indirect effects on avoidable, material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is offshore infrastructure including oil/gas wells, diffusers and installations, dredging locations, offshore wind farm sites, pipelines and cables, the Port of Seaham, the Port of Blyth and multiple spoil dumping sites within route corridors of the option; however, within each corridor there is potential to substantially avoid these sensitive areas. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+2	0/+2	Direct & Indirect	Yes
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks and scheduled monuments	-1	0	0	Direct & Indirect	Yes

within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).					
Landscape / Seascape and Visual Amenity (L) There are major settlements and urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). Generally, the landscape types in the vicinity of existing substations and proposed areas are of relatively low sensitivity to development (e.g., due to urban nature, elements of landscape screening), the Lincolnshire Connection Node area is likely to be of higher sensitivity to development. There is potential for cumulative landscape and visual effects due to the cumulative development of infrastructure in some areas. This includes the Creyke Beck area, where converter stations for offshore wind farms are currently under construction, and the Lincolnshire Connection Node area, where a new interface point is already required.	-2	-2	-2	Indirect	No

HND1 – North Scotland Option A Preferred Radial			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**Preferred Option (Y/N)**
104km	59km	45km	No
Routes Included in Design and Capacity			
There are two routes included in this design: SW_N1 to Spittal (NS2) (2.25GW); SW_N4 to Arnish (Lewis) (NS6) (1GW).			
Design Description			
This is the published preferred option for this region. SW_N1 connects to Spittal via four to six AC cables, with a mainly offshore route, while SW_N4 is connected to Arnish (Lewis) via two to three AC cables, with a mainly onshore route.			

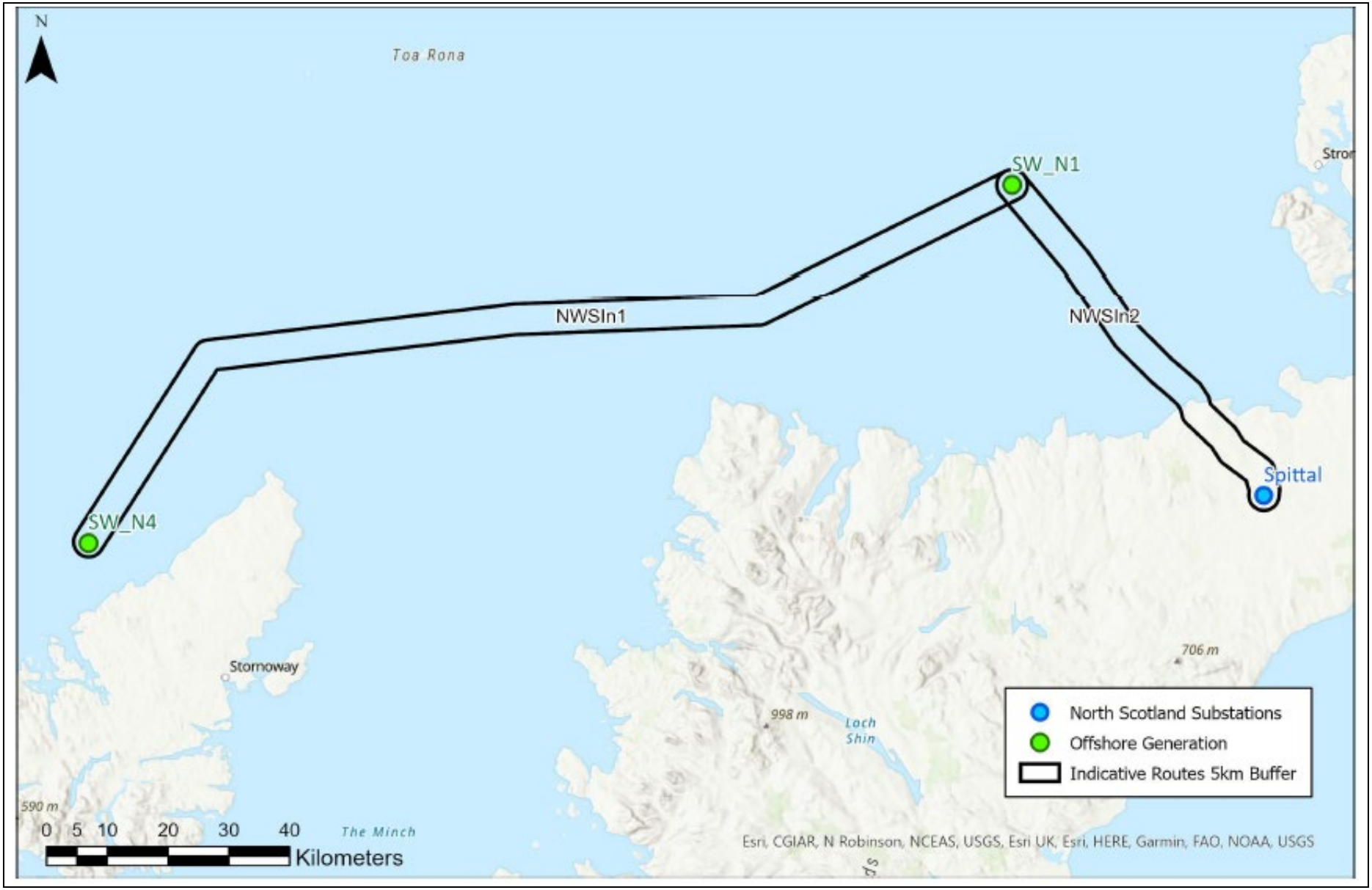

N
Toa Rona
SW_N1
Stromness
NS2
Spittal
SW_N4
NS6
Arnish
(Lewis)
706 m
998 m
Loch
Shin
590 m
The Minch
Offshore Generation
Substations
Indicative Routes 5km Buffer
0 10 20 40 60 80
Kilometers
Esri, CGIAR, Robinson, NCEAS, USGS, Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are designated sites that cannot be avoided by cable routes within the option. The North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) and the River Thurso SAC (designated for fish species including Atlantic salmon) are within the route to Spittal and cannot be avoided, and the Lewis Peatlands SPA (designated for breeding Black-throated diver, Dunlin, Golden Eagle, Golden plover, Greenshank, Merlin, Red-throated diver) and the Lewis Peatlands Ramsar cannot be avoided on the route to Arnish. There is potential for short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities. This could include direct or indirect loss or damage to habitat and disturbance and displacement of species (-2). It may be possible avoid direct impacts within the River Thurso SAC by drilling beneath the site. There are also designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, such as indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features that are within the 5km indicative route corridors and cannot be avoided, including Annex I reef. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect	No
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure.	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).					
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL, as there are no unavoidable sensitivities of significance. There is potential for direct and indirect effects on areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.	-2	0	0	Direct & Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable, and indirect effects on avoidable, material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-1). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-1	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There are wrecks and Scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of the Spittal substation; the Landscape Character Type (Farmed Lowland Plain) is expansive and exposed and likely sensitive to new development that would be visible on the horizon. The area around the existing Arnish substation is already commercialised and of low sensitivity to development; outside of the immediate area the landscape is open heather moorland and rough grassland of the Rocky Moorland – Outer Hebrides Landscape Character Type and considered of high sensitivity to development.	-2	-2	-2	Indirect	No

HND1 – North Scotland Option B Alternative Coordinated			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**Preferred Option (Y/N)**
239km	218km	20km	No
Routes Included in Design and Capacity			
There are two routes included in this design: SW_N4 to SW_N1 (NWSIn1) (1GW); SW_N1 to Spittal (NWSIn2) (3GW).			
Design Description			
This is the published alternative coordinated option for this region. SW_N4 connects to SW_N1 via a HVDC link, SW_N1 connects to Spittal via an AC link.			

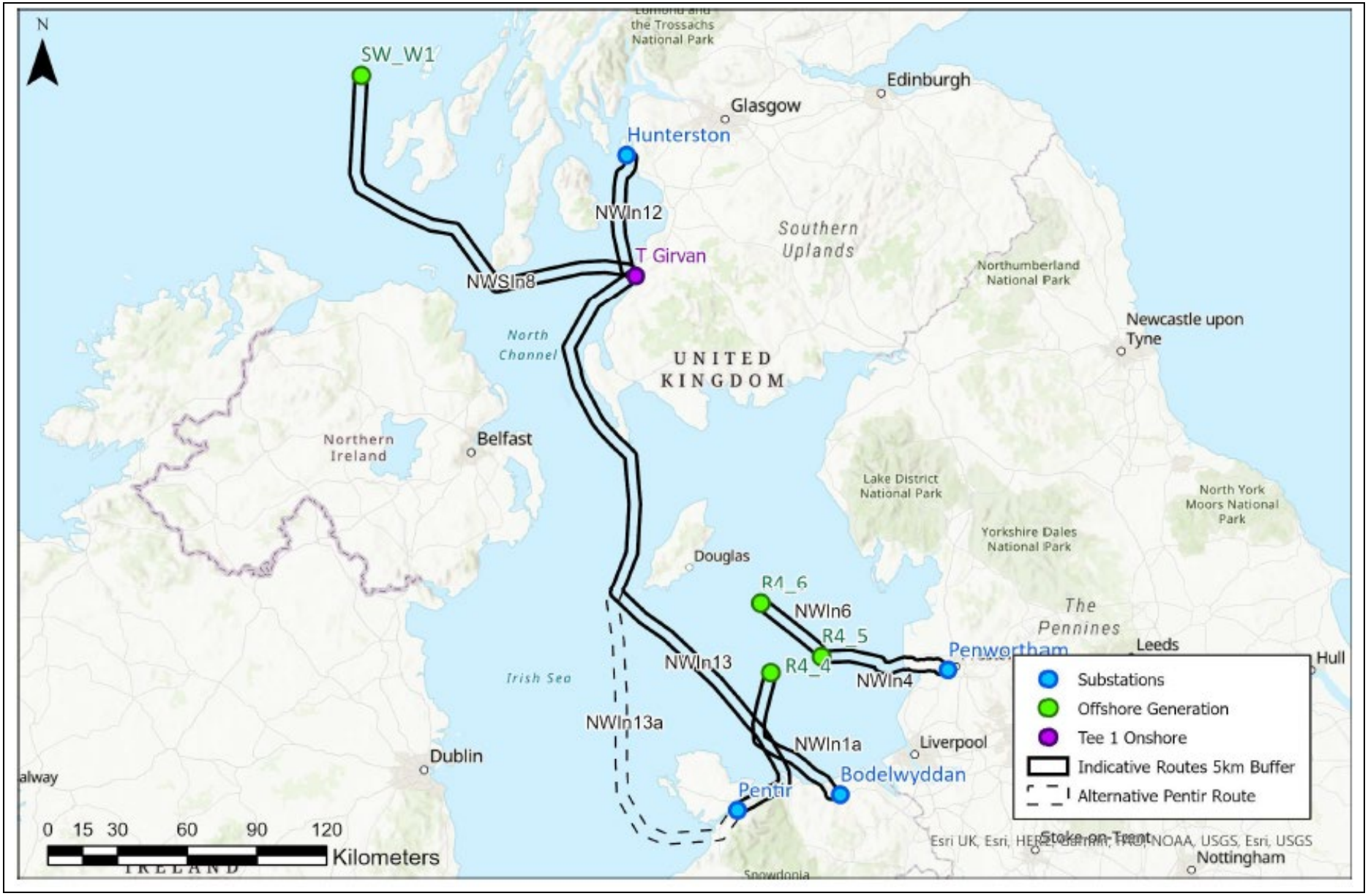

N
Toa Rona
SW_N1
NWSIn1
NWSIn2
Spittal
SW_N4
Stornoway
998 m
Loch Shin
706 m
590 m
The Minch
0 5 10 20 30 40
Kilometers
North Scotland Substations
Offshore Generation
Indicative Routes 5km Buffer
Esri, CGIAR, N Robinson, NCEAS, USGS, Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There is a designated site that cannot be avoided by a cable route within the option. The River Thurso SAC (designated for fish species including Atlantic salmon) is within the route to Spittal and cannot be avoided. There is potential for short-term direct and indirect effects on designated features within this site in the construction and decommissioning phases and during cable maintenance activities. This could include direct or indirect loss or damage to habitat (-2). It may be possible avoid direct impacts by drilling beneath the site. There are also designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, such as indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features that are within the route corridors and cannot be avoided, including Annex I reef. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	-2	-2	Direct & Indirect	No
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL, as there are no unavoidable sensitivities of significance. There is potential for direct and indirect effects on	-2	0	0	Direct & Indirect	Yes

areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.					
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the short to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

Material Assets and Infrastructure (MA) There is potential for short-term negative effects on MA due to military areas that cannot be avoided. In general, there is potential for short-term direct effects on unavoidable, and indirect effects on avoidable, material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks and Scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of the Spittal substation; the Landscape Character Type (Farmed Lowland Plain) is expansive and exposed and likely sensitive to new development that would be visible on the horizon.	-2	-2	-2	Indirect	No

HND1 – North West Option A Preferred Coordinated			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**Preferred Option (Y/N)**
703km	635km	68km	No
Routes Included in Design and Capacity			
There are six routes included in this design: W1 to W1 tee point (NWIn8); Hunterston to W1 tee point (NWIn12); W1 tee point to Pentir (NWIn13) (2GW); R4_4 to Bodelwyddan (NWIn1a) (1.5GW); R4_6 to R4_5 (NWIn6) (1.5GW); R4_5 to Penwortham (NWIn4) (0.48GW).			
Design Description			
This is the published preferred option for this region. SW_W1 has a HVDC connection to Pentir with a tee to Hunterston. R4_4 connects to Bodelwyddan via a radial AC circuit. R4_5 and R4_6 have a coordinated connection to Penwortham.			


N
SW_W1
Edinburgh
Glasgow
Hunterston
NWIn12
Southern Uplands
T Girvan
NWSIn8
Northumberland National Park
Newcastle upon Tyne
North Channel
UNITED KINGDOM
Northern Ireland
Belfast
Lake District National Park
North York Moors National Park
Yorkshire Dales National Park
Douglas
R4_6
NWIn6
R4_5
The Pennines
Leeds
Hull
Penwortham
NWIn13
R4_4
NWIn4
Irish Sea
NWIn13a
NWIn1a
Liverpool
Dublin
Bodelwyddan
Pentir
Substations
Offshore Generation
Tee 1 Onshore
Indicative Routes 5km Buffer
Alternative Pentir Route
0 15 30 60 90 120
Kilometers
Stoke-on-Trent
Nottingham
Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are designated sites that cannot be avoided by cable routes within the option. The Menai Strait and Conwy Bay SAC (designated for sandbanks, mudflats and sandflats, reefs, sea caves and large shallow inlets and bays), Liverpool Bay SPA designated for bird species including red-throated diver, little gull, common scoter, little tern and common tern), Clyde Sea Sill MPA (designated for sand and coarse sediment communities, fronts and black guillemot), and Flyde MCZ (designated for subtidal sediment habitats, flora and fauna) cannot be avoided within the route corridors. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). It may be possible to take a southerly approach to Pentir to avoid sensitive habitats of the Menai Strait and Conwy Bay SAC, reducing some significant impact. There are also designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, such as indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features that are within the 5km indicative route corridors and cannot be avoided, including NRW Sensitive Habitats for the route to Pentir and Annex I reef. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct & Indirect	Yes
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however there is potential to avoid all of these areas. There is potential for short-	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).					
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL, as there are no unavoidable sensitivities of significance. There is potential for direct and indirect effects on areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure and areas of primarily very good and good quality agricultural land that are within the route corridors that cannot be avoided (-2).	-2	0	0	Direct & Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cable and pipeline crossings in all route corridors, and areas of high shipping density in the approaches to Bodelwyddan and Pentir (-2). Airport lands are also unavoidable at Blackpool Airport, as the landfall and onshore area for this route at Penwortham is otherwise highly constrained by the presence of urban development, and potential for impacts on airport operations would need to be considered. There is also potential for short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks and scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts	-2	-2	-2	Indirect	No

on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations. Generally, the landscape types in the vicinity of existing substations and proposed areas are of relatively low sensitivity to development; however, there are areas of moderate sensitivity around Hunterston substation, rural areas around Pentir substation, and in some areas around Bodelwyddan and Girvan.					

HND1 – North West Option B Alternative Coordinated			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**Preferred Option (Y/N)**
596km	535km	60km	No
Routes Included in Design and Capacity			
There are five routes included in this design: SW_W1 to Pentir (NW11) (2GW); R4_4 to Bodelwyddan (NWIn1a) (1.5GW); R4_4 to R4_6 (NWIn5) (1.5GW; R4_5 to R4_6 (NWIn6); R4_5 to Penwortham (NWIn4) (0.48GW).			
Design Description			
This is the published alternative coordinated option for this region. Option B is formed of five route corridors. SW_W1 is connected to Pentir via a HVDC circuit, consistent with the preferred radial option. The Irish Sea wind farms are connected in a ring, with a HVDC connection from R4_4 to Bodelwyddan, and AC connections from R4_4 to R4_6, R4_6 to R4_5 and R4_5 to Penwortham.			


N
SW_W1
the Trossachs National Park
Edinburgh
Glasgow
Southern Uplands
Northumberland National Park
Newcastle upon Tyne
North Channel
UNITED KINGDOM
Northern Ireland
Belfast
Lake District National Park
North York Moors National Park
Yorkshire Dales National Park
Douglas
R4_6
Middleton
NWIn6
The Pennines
NWIn5
R4_5
Penwortham
Leeds
Hull
NW11
R4_4
NWIn4
Irish Sea
NW11a
NWIn1a
Liverpool
Dublin
Bodelwyddan
Pentir
Substations
Offshore Generation
Indicative Routes 5km Buffer
Alternative Indicative Routes 5km Buffer
0 15 30 60 90 120
Kilometers
Esri, CGIAR, USGS, Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS
Stoke-on-Trent
Nottingham

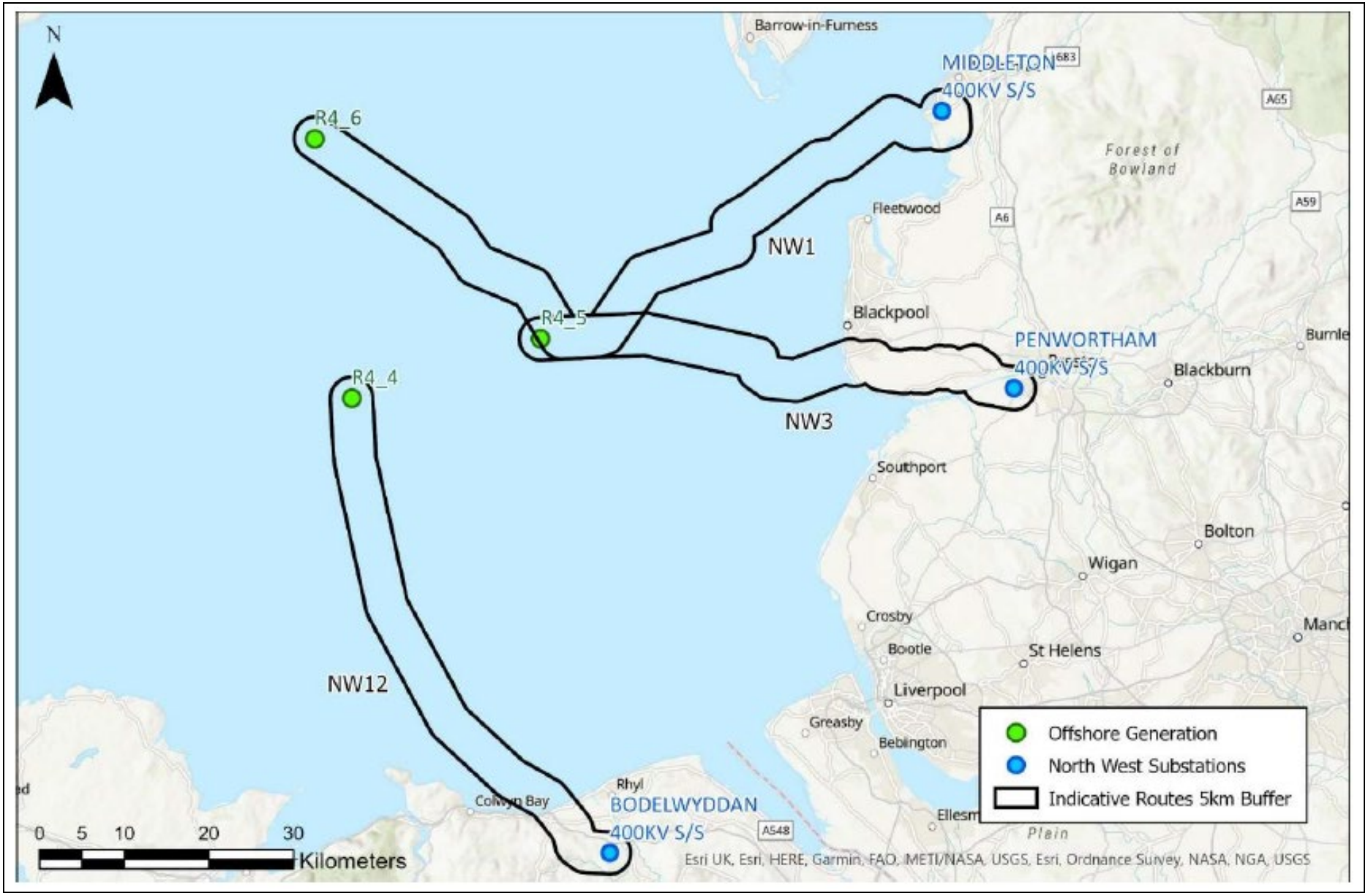
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are designated sites that cannot be avoided by cable routes within the option. The Menai Strait and Conwy Bay SAC (designated for sandbanks, mudflats and sandflats, reefs, sea caves and large shallow inlets and bays), Liverpool Bay SPA designated for bird species including red-throated diver, little gull, common scoter, little tern and common tern), North Channel SAC (designated for harbour porpoise), Flyde MCZ (designated for subtidal sediment habitats, flora and fauna), South Rigg MCZ (protects a range of habitats (from fine sediments to rocky habitats) supporting a wide variety of species) and Calf and Wart Bank MPA (a submerged sand an shell bank important as a nursery ground for sandeel and juvenile fish) cannot be avoided within the route corridors. The Liverpool Bay SPA is unavoidable within three of the routes within this Option. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). It may be possible to amend a route landfall to avoid the Ribble estuary and to take a southerly approach to Pentir to avoid sensitive habitats of the Menai Strait and Conwy Bay SAC, reducing some significant impact. There are also designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, such as indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided, including NRW Sensitive Habitats for the route from SW_W1 to Pentir and Annex I reef. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct & Indirect	Yes

Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however there is potential to avoid all of these areas. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL, as there are no unavoidable sensitivities of significance. There is potential for direct and indirect effects on areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure and areas of primarily very good and good quality agricultural land that are within the route corridors that cannot be avoided (-2).	-2	0	0	Direct & Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cable crossings in all route corridors, and pipeline crossings in two routes. Airport lands are also unavoidable at Blackpool Airport, as the landfall and onshore area for this route at Penwortham is otherwise highly constrained by the presence of urban development, and potential for impacts on airport operations would need to be considered. There is also potential for short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There are wrecks and scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities,	-1	0	0	Direct & Indirect	Yes

and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).					
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations. Generally, the landscape types in the vicinity of existing substations and proposed areas are of relatively low sensitivity to development; however, there are areas of moderate sensitivity in rural areas around Pentir substation, and in some areas around Bodelwyddan and Girvan.	-2	-2	-2	Indirect	No

HND1 – North West Option C Preferred Radial			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**Preferred Option (Y/N)**
701km	635km	65km	No
Routes Included in Design and Capacity			
There are four routes included in this design: R4_4 to Bodelwyddan (NW12) (1.5GW); R4_5 to Middleton (NW1) (0.48GW); R4_6 to Penwortham (NW3) (1.5GW); SW_W1 (ScotWind W1) to Pentir (NW11) (2GW).			
Design Description			
This is the preferred radial alternative option for this region, which comprises the radial preferred Option for Scotland West and North West. For the Scotland West region, the preferred option connects SW_W1 to Pentir, approaching the Pentir substation from the north, and requiring one pair of HVDC cables. The radial option for the North West connects R4_5 to Middleton, R4_6 to Penwortham and R4_4 to Bodelwyddan.			

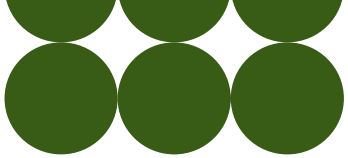

N
Barrow-in-Furness
MIDDLETON
400KV S/S
R4_6
R4_5
R4_4
NW1
NW3
NW12
Forest of
Bowland
Fleetwood
Blackpool
PENWORTHAM
400KV S/S
Blackburn
Southport
Bolton
Wigan
Crosby
Bootle
St Helens
Liverpool
Greasby
Bebington
Rhyl
Colwyn Bay
BODELWYDDAN
400KV S/S
A548
A6
A59
A65
0 5 10 20 30
Kilometers
Offshore Generation
North West Substations
Indicative Routes 5km Buffer
Esri UK, Esri, HERE, Garmin, FAO, METI/NASA, USGS, Esri, Ordnance Survey, NASA, NGA, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are designated sites that cannot be avoided by cable routes within the option. The Menai Strait and Conwy Bay SAC (designated for sandbanks, mudflats and sandflats, reefs, sea caves and large shallow inlets and bays), Liverpool Bay SPA designated for bird species including red-throated diver, little gull, common scoter, little tern and common tern), North Channel SAC (designated for harbour porpoise), Morecambe Bay SAC (designated for sand dunes and marine areas and sea inlets), and Ribble and Alt Estuaries SPA (designated for breeding common tern and ruff, and non-breeding seabird and waterbird species) cannot be avoided within the route corridors. The Morecambe Bay SAC has been identified as having features with sensitivity to cabling activities, and the Liverpool Bay SPA would need to be crossed by three routes within the Option. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, such as indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on sensitive features both within and outside of designated sites that are within the 5km indicative route corridors and cannot be avoided, including NRW Sensitive Habitats within the Menai Strait and Conwy Bay SAC for the route to Pentir. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct & Indirect	Yes
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are major settlements and urban areas	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

within route corridors of the option, including Blackpool, Lytham St Annes, Warton, Abergele, Towyn, Bodelwyddan, St Asaph, Bangor, Llanfairfechan, Penmaenmawr, Dwygyfylchi and Conwy. However, there is potential to avoid all of these areas within the route corridors. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).					
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL, as there are no unavoidable sensitivities of significance. There is potential for direct and indirect effects on areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure and areas of primarily very good and good quality agricultural land that are within the route corridors that cannot be avoided (-2).	-2	0	0	Direct & Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

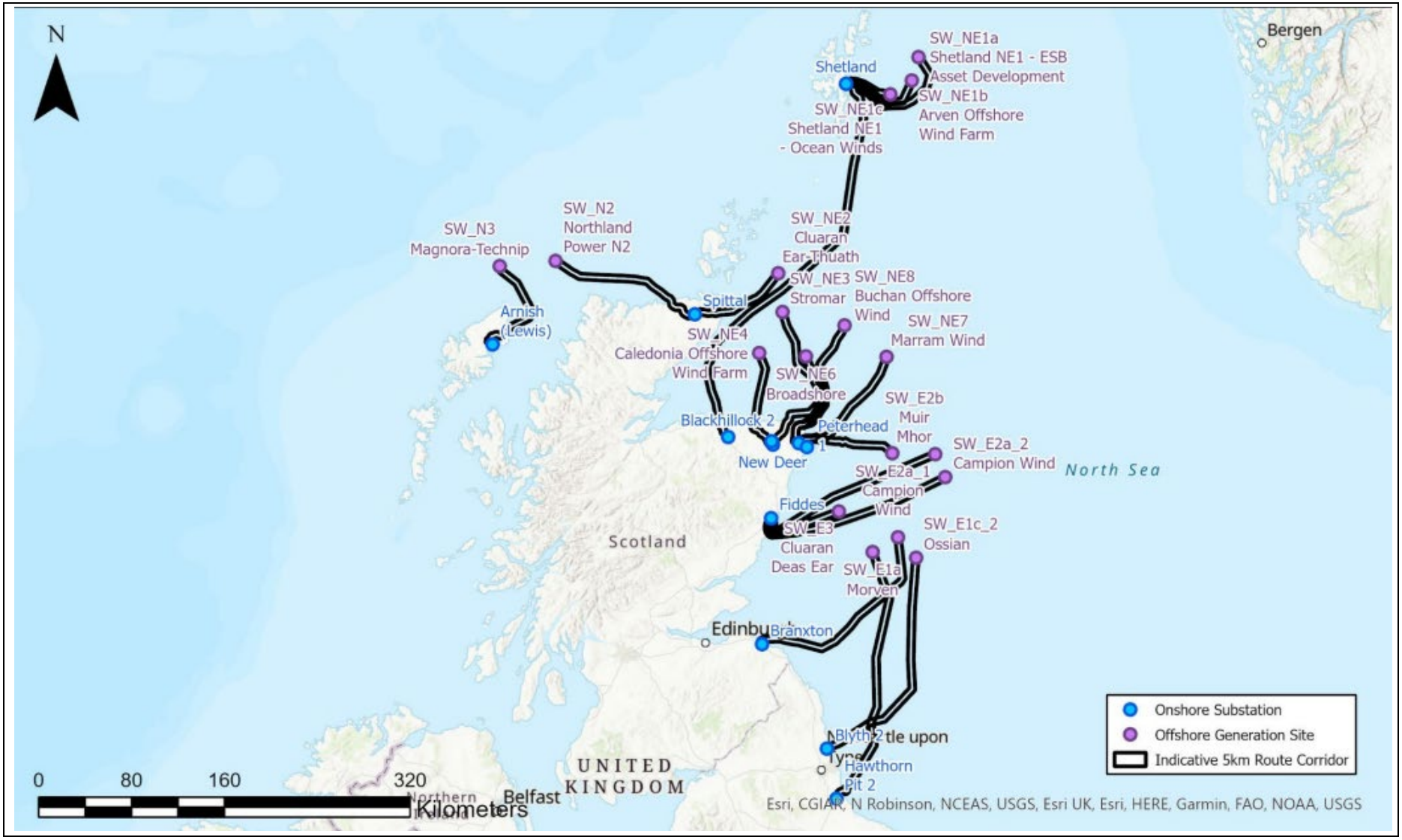
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cable and pipeline crossings. Airport lands are also unavoidable at Blackpool Airport, as the landfall and onshore area for this route is otherwise highly constrained by the presence of urban development, and potential for impacts on airport operations would need to be considered. There is also potential for short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities, including port lands, existing wind farms designated anchorage areas, dredge and spoil dumping sites, offshore cables and pipelines and offshore oil and gas installations (-2). There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+2).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks and scheduled monuments, as well as the Slate Landscape of North West Wales WHS, within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes

Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations. Generally, the landscape types in the vicinity of existing substations and proposed areas are of relatively low sensitivity to development; however, there are areas of moderate sensitivity in rural areas around Pentir substation, and in some areas around Bodelwyddan.	-2	-2	-2	Indirect	No



F.3.2 HNDFUE ScotWind Options

ScotWind – S_001za			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
2622 km	2369 km	260 km	No
Routes Included in Design and Capacity			
There are 19 routes included in this design: SW_N3 to Arnish (500MW); SW_N2 to Spittal (1500MW); SW_NE2 Spittal (1050MW); SW_NE3 to New Deer 2 (1000MW); SW_NE3 to New Deer 2 (1000MW); SW_NE6 to Peterhead2/DCSS (1000MW); SW_NE7 to Peterhead2/DCSS (1500MW); SW_NE8 to Peterhead1 (1000MW); SW_E2b to Peterhead2/DCSS (1000MW); SW_E3 to Fiddes (1050MW); SW_E2a_1 to Fiddes (1500MW); SW_E2a_2 to Fiddes (1500MW); SW_E1a to Hawthorn Pit 2 (1500MW); SW_E1c_1 to Branxton (1800MW); SW_E1c_2 to Blyth 2 (1800MW); SW_NE1a to Shetland Hub (500MW); SW_NE1b to Shetland Hub (1800MW); SW_NE1c to Shetland Hub (500MW); Shetland Hub to Blackhillock (1800MW).			
Design Description			
Design S_001za is essentially a radial design, with the exception of the Shetland sites and involves the following proposed connections.			


N
Bergen
SW_NE1a
Shetland NE1 - ESB
Asset Development
SW_NE1b
Arven Offshore
Wind Farm
Shetland
SW_NE1c
Shetland NE1
- Ocean Winds
SW_N2
Northland
Power N2
SW_N3
Magnora-Technip
SW_NE2
Cluaran
Ear-Thuath
SW_NE3
Stromar
SW_NE8
Buchan Offshore
Wind
SW_NE7
Marram Wind
Spittal
Arnish
(Lewis)
SW_NE4
Caledonia Offshore
Wind Farm
SW_NE6
Broadshore
SW_E2b
Muir
Mhor
Blackhillock_2
Peterhead
1
New Deer
SW_E2a_2
Campion Wind
SW_E2a_1
Campion
Wind
North Sea
Fiddes
SW_E3
Cluaran
Deas Ear
SW_E1c_2
Ossian
SW_E1a
Morven
Scotland
Edinbu
Branxton
tle upon
Blyth 2
Tyne
Hawthorn
Pit 2
UNITED
KINGDOM
Belfast
Onshore Substation
Offshore Generation Site
Indicative 5km Route Corridor
0
80
160
320
Kilometers
Esri, CGIAR, N Robinson, NCEAS, USGS, Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites that cannot be avoided by cable routes within the option. The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) cannot be avoided for routes connecting to the New Deer or Peterhead areas, with a requirement for a cable crossing and potentially a pipeline crossing within the site; for all but one route the trench itself and known locations of protected habitat are avoidable. The Northumberland Marine SPA (designated for breeding tern species and migratory species such as puffin and guillemot), Berwick to St Marys MCZ and Coquet to St Marys MCZ are unavoidable for a route to Blyth, with both MCZs identified as sensitive to pressures associated with cabling activities and with cable crossings required within these sites. The Northumberland Marine SSSI is also unavoidable, with existing damage to dune habitat identified. The Inner Hebrides and the Minches SAC (designated for harbour porpoise), North-East Lewis MPA (designated, in part, for Risso's dolphin and sand eels) and Lewis Peatlands SPA (designated for breeding Black-throated diver, Dunlin, Golden Eagle, Golden plover, Greenshank, Merlin, Red-throated diver) and Ramsar site cannot be avoided for a route to Arnish. The River Thurso SAC (designated for fish species including Atlantic salmon) cannot be avoided for a route to Spittal. The Durham Coast SAC (designated for vegetated sea cliffs) is unavoidable for a route to Hawthorn Pit (it may be possible to drill under the sites to avoid direct impacts, but indirect impacts on coastal processes within the SAC and SSSI will need to be considered). The Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) is unavoidable for a route to Branxton, with a requirement for a cable crossing within the site. The East Mainland Coast SPA (designated for breeding population of Shag, and non-breeding populations of Great northern diver, Red-throated diver, Slavonian grebe, Common scoter, Eider, Goldeneye, Long-tailed duck, Red-breasted merganser, Scaup, Shag and Velvet scoter) cannot be avoided for the routes to Shetland Hub and the Moray Firth SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) and likely the Noss SPA (designated for breeding populations of Fulmar, Gannet, Great skua, Guillemot, Kittiwake, Puffin, and the overall breeding seabird	-3	-2	-2	Direct and Indirect	Yes

assemblage) cannot be avoided for the route from Shetland Hub to Blackhillock. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for significant short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. While virtually all designated sites that have features known to be sensitive to cabling activities are avoidable, some have the potential to be indirectly impacted. This includes the North East of Farnes Deep HMPA, Swallow Sand MCZ, and Solan Bank Reef SAC. Potential indirect impacts on protected features within these sites could include indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided, such as Annex I habitats. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat such as Annex I reef in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option of Stornoway, Banff, Whitehall, Seaham and Peterhead, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	-1/+2	-1/+2	Indirect & Indirect	Yes
Geology, Soils and Land Use (GSL)	-3	-2	-2	Indirect & Direct	Yes

There is potential for significant negative effects in the short-term on GSL, as there are unavoidable sensitivities present for some of the routes within the option with an area of designated seabed in the Southern Trench MPA and the Lewis Peatlands SPA is unavoidable, with limited scope to avoid the cliffs at the Durham Coast SAC (-3). There is potential for direct and indirect effects on areas of sensitive Annex I reef, the Durham Coast SAC/SSSI which are influenced by coastal processes, and areas of high-quality agricultural land that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.					
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	-1/+2	-1/+2	Indirect & Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).					
Material Assets and Infrastructure (MA) In general, there is potential for moderate short-term direct negative effects on MA due to assets and areas that cannot be avoided within the route corridors. There are existing cables/connections at landfalls for some routes, existing pipelines, including those connecting to the St. Fergus Gas Terminal and a large number of proposed connections for some routes with the need for numerous cable/pipeline crossings (-2). Several routes pass through unavoidable military practice areas which may include live firing particularly around Cape Wrath. There are areas of high fishing density and associated port areas as well as areas of high intensity shipping and shipping lanes within the option, however these are likely avoidable, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect significant positive effects through the facilitation of new renewable energy infrastructure (+3).	-2	0/+3	0/+3	Direct & Indirect	Yes
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from the presence of	-1	-2	-2	Direct & Indirect	No

onshore infrastructure during operation, including potential for visual impacts from converter stations or sub-stations in the Spittal area due to the flat topography (-2).					

ScotWind – S_008n-3			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
3785 km	3532 km	252 km	No
Routes Included in Design and Capacity			
There are 23 routes included in this design: SW_N3 to Arnish (500MW); SW_N2 to Spittal (1500MW); SW_NE2 to Spittal (1050MW); SW_NE3 to New Deer 2 (1000MW); SW_NE4 to New Deer (550MW); SW_NE6 to Peterhead2/DCSS (1000MW); SW_NE8 to Peterhead1 (1000MW); SW_NE7 to Peterhead2/DCSS (1500MW); SW_E2b to Peterhead2/DCSS (2000MW); SW_E2b to SW_E2a_1 (2500MW); SW_E3 to Fiddes (1050MW); SW_E2a_1 to SW_E2a_2 (2500MW); SW_E1a to Branxton (2000MW); SW_E1a to SW_E1c_2 (2000MW); SW_E1c_1 to Norwich Main (2000MW); SW_E1c_1 to SW_E1c_2 (1000MW); SW_NE1a to Shetland (500MW); SW_NE1b to Shetland (1800MW); SW_E2a_2 to SW_E1c_1 (2000MW); SW_E1c_2 to Lincolnshire CN (2000MW); SW_E2a_2 to Richborough (2000MW); Shetland Hub to Blackhillock (1800MW); SW_NE1c to Shetland (500MW).			
Design Description			
Design S_008n-3 is balanced between radial and coordinated options. This includes connections between offshore generation sites such as Morven and Ossian, Muir Mhor and Campion Wind, and Campion Wind and Ossian. The option also includes longer routes which connect to the southern east coast of England at Norwich and Richborough. The option contains the following proposed connections.			


N
SW_NE1a
Shetland NE1 - ESB
Asset Development
Shetland
SW_NE1b
Arven Offshore
Wind Farm
SW_NE1c
Shetland NE1
- Ocean Winds
SW_N2
Northland
Power N2
SW_N3
Magnora-Technip
SW_NE2
Cluaran Ear-Thuath
SW_NE8
Buchan
Offshore Wind
Arnish
(Lewis)
Spittal
SW_NE7
Marram Wind
New
Deer 2
Peterhead
Blackhillock 2
SW_E2a_1
Campion Wind
New Deer
SW_E2a_2
Campion Wind
Fiddes
Scotland
SW_E1a
Morven
SW_E1c_2
Ossian
Edin
Branxton
Newcastle upon
Tyne
Belfast
Douglas
The
Pennines
Manchester
Dublin
IRELAND
Lincolnshire
Connection Node
Nottingham
Bacton
Norwich
Birmingham
Wales
Cardiff
London
Richborough 2
Bergen
Oslo
Lake
Vänern
Kristiansand
Gothenburg
Kattegat
DENMARK
Esbjerg
Hamburg
Bremen
Hanover
NETHERLANDS
Amsterdam
Rotterdam
Antwerp
Brussels
Cologne
Frankfurt am
Onshore Substation
Offshore Generation Site
Indicative 5km Route Corridor
0
125
250
500
Kilometers
Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites that cannot be avoided by cable routes within the option. The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) cannot be avoided for routes connecting to the New Deer or Peterhead areas; for all but one route the trench itself and known locations of protected habitat are avoidable. The Inner Hebrides and the Minches SAC (designated for harbour porpoise) and the North-East Lewis MPA (designated, in part, for Risso's dolphin and sand eels) cannot be avoided for a route to Arnish. The River Thurso SAC (designated for fish species including Atlantic salmon) cannot be avoided (it may be possible to drill under the sites to avoid direct impacts) and there is limited scope to avoid the North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) for a route to Spittal. The Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) is unavoidable for a route to Branxton, with a requirement for a cable crossing within the site. The East Mainland Coast SPA (designated for breeding population of Shag, and non-breeding populations of Great northern diver, Red-throated diver, Slavonian grebe, Common scoter, Eider, Goldeneye, Long-tailed duck, Red-breasted merganser, Scaup, Shag and Velvet scoter) cannot be avoided for the routes to Shetland Hub and the Moray Firth SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) cannot be avoided for the route from Shetland Hub to Blackhillock. There are several routes that need to pass through the Southern North Sea SAC (designated for harbour porpoise), including to LCN, Richborough and Norwich, with potential to require many cable crossings; those routes into LCN and Norwich also cannot avoid the Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern), with cable/pipeline crossings also required within this site. The Sandwich Bay SAC (designated for dune habitats) and the Thanet Coast and Sandwich Bay SPA (designated for European golden plover, ruddy turnstone, and little tern) are also unavoidable for a route into Richborough, with several cable crossings required. There is potential for significant short-term direct and indirect effects on designated features within	-3	-2	-2	Direct and Indirect	Yes

these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for significant short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. While virtually all designated sites that have features known to be sensitive to cabling activities are avoidable, some have the potential to be indirectly impacted. This includes the Cromer Shoal Chalk Beds MCZ, Haisborough, Hammond and Winterton SAC, and North Norfolk Sandbanks and Saturn Reef SAC as there would be a need for cable crossing in proximity to these sites for a route to Norwich. Other sites for which there may be potential for indirect impacts includes the North East of Farnes Deep HMPA, Swallow Sand MCZ, Holderness Offshore MCZ, Inner Dowsing, Race Bank and North Ridge SAC, Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC, Dogger Bank SAC, North Norfolk Sandbanks and Saturn Reef SAC, Cromer Shoal and Chalk Beds MCZ, Haisborough, Hammond and Winterton SAC, Thanet Coast SAC, Goodwin Sands MCZ, Thanet Coast MCZ, and Solan Bank Reef SAC. Potential indirect impacts on protected features within these sites could include indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided, such as Annex I habitats. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat such as Annex I reef in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option of Stornoway, Banff, Whitehall, and Peterhead, however these can be avoided.	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).					
Geology, Soils and Land Use (GSL) There is potential for significant negative effects in the short-term on GSL, as there are unavoidable sensitivities present for some of the routes within the option with an area of designated seabed in the Southern Trench MPA and the limited scope to avoid the North Caithness Cliffs SPA/MPA and cliffs at the Durham Coast SAC (-3). There is potential for direct and indirect effects on areas of sensitive Annex I reef and sandbanks, the Durham Coast SAC/SSSI which are influenced by coastal processes, and areas of excellent and high-quality agricultural land that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.	-3	-2	-2	Indirect & Direct	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	-1/+2	-1/+2	Indirect & Indirect	Yes
Climatic Factors (CF)	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).					
Material Assets and Infrastructure (MA) In general, there is potential for moderate short-term direct negative effects on MA due to assets and areas that cannot be avoided within the route corridors. There are existing cables/connections at landfalls for some routes, existing pipelines and a large number of proposed connections for some routes with the need for numerous cable/pipeline crossings (-2). Several routes pass through unavoidable military practice areas which may include live firing particularly around the Moray Firth and Cape Wrath as well as several oil and gas wells around Richborough. There are areas of high fishing density and associated port areas as well as areas of high intensity shipping and shipping lanes within the option, however these are likely avoidable, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect significant positive effects through the facilitation of new renewable energy infrastructure (+3).	-2	0/+3	0/+3	Direct & Indirect	Yes
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes

Landscape / Seascape and Visual Amenity (L) There is potential for negative effects on L, as the Broads National Park and Norfolk Coast AONB cannot be avoided (-2). There are major settlements within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from the presence of onshore infrastructure during operation, including potential for visual impacts from converter stations or sub-stations in the Spittal area due to the flat topography (-2).	-2	-2	-2	Direct & Indirect	No

ScotWind – S_009i-1			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
3825 km	3538 km	287 km	No
Routes Included in Design and Capacity			
There are 23 routes included in this design: SW_N3 to Arnish (500MW); SW_N2 to Spittal (1500MW); SW_NE2 to Spittal (1050MW); SW_NE3 to New Deer 2 (1000MW); SW_NE4 to New Deer 2 (550MW); SW_NE6 to Peterhead2/DCSS (1000MW); SW_NE8 to Peterhead1 (1000MW); SW_NE7 to Peterhead2/DCSS (1500MW); SW_E2b to Peterhead2/DCSS (2000MW); SW_E2b to SW_E2a_1 (2000MW); SW_E3 to Fiddes (1050MW); SW_E1a to Hawthorn Pit (1500MW); SW_E1a to SW_E1c_2 (2000MW); SW_E1c_1 to Lincolnshire connection node (2000MW); SW_E1c_1 to SW_E1c_2 (1000MW); SW_NE1a to Shetland (500MW); SW_NE1b to Shetland (1800MW); SW_E2a_2 to SW_E1c_1 (2000MW); SW_E1c_2 to Weston Marsh (2000MW); SW_E2a_2 to Richborough (2000MW); SW_E2a_1 to SW_E2a_2 (2500MW); SW_NE1c to Shetland (500MW); Shetland Hub to Blackhillock (1800MW).			
Design Description			
Design S_009i-1 is balanced between radial and coordinated options. This includes connections between offshore generation sites such as Morven and Ossian, Muir Mhor and Campion Wind, and Campion Wind and Ossian. The option also includes longer routes which connect to the southern east coast of England at Weston Marsh and Richborough. The option contains the following proposed connections.			


N
SW_NE1a
Shetland NE1 - ESB
Asset Development
Shetland
SW_NE1b
Arven Offshore
Wind Farm
SW_NE1c
Shetland NE1
- Ocean Winds
SW_N2
Northland
Power N2
SW_N3
Magnora-Technip
SW_NE2
Cluaran Ear-Thuath
SW_NE8
Buchan
Offshore Wind
Spittal
Arnish
(Lewis)
SW_NE7
Marram Wind
New
Deer 2
Peterhead
Blackhillock 2
SW_E2a_1
Campion Wind
New Deer
SW_E2a_2
Campion Wind
Fiddes
Scotland
SW_E1a
Morven
SW_E1c_2
Ossian
Edinburgh
Hawthorn
Pit 2
Belfast
Douglas
Dublin
IRELAND
The
Pennines
Manchester
Lincolnshire
Connection Node
Weston Marsh
Birmingham
Wales
Cardiff
London
Richborough 2
Bergen
Oslo
Lake
Vänern
Kristiansand
Gothenburg
Kattegat
DENMARK
Esbjerg
Hamburg
Bremen
Hanover
NETHERLANDS
Amsterdam
Rotterdam
Antwerp
Brussels
Cologne
Frankfurt am
Onshore Substation
Offshore Generation Site
Indicative 5km Route Corridor
0
125
250
500
Kilometers
Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites that cannot be avoided by cable routes within the option. The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) cannot be avoided for routes connecting to the New Deer or Peterhead areas; for all but one route the trench itself and known locations of protected habitat are avoidable. The Inner Hebrides and the Minches SAC (designated for harbour porpoise) and the North-East Lewis MPA (designated, in part, for Risso's dolphin and sand eels) cannot be avoided for a route to Arnish. The River Thurso SAC (designated for fish species including Atlantic salmon) cannot be avoided (it may be possible to drill under the sites to avoid direct impacts) and there is limited scope to avoid the North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) for a route to Spittal. The Durham Coast SAC (designated for vegetated sea cliffs) is unavoidable for a route to Hawthorn Pit (it may be possible to drill under the sites to avoid direct impacts, but indirect impacts on coastal processes within the SAC and SSSI will need to be considered). The east Mainland Coast SPA (designated for breeding population of Shag, and non-breeding populations of Great northern diver, Red-throated diver, Slavonian grebe, Common scoter, Eider, Goldeneye, Long-tailed duck, Red-breasted merganser, Scaup, Shag and Velvet scoter) cannot be avoided for the routes to Shetland Hub and the Moray Firth SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) cannot be avoided for the route from Shetland Hub to Blackhillock. The are several routes that need to pass through the Southern North Sea SAC (designated for harbour porpoise), including to LCN, Richborough and Weston Marsh, with potential to require many cable crossings; those routes into LCN and Weston Marsh also cannot avoid the Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern), with cable/pipeline crossings also required within this site. The Sandwich Bay SAC (designated for dune habitats) and the Thanet Coast and Sandwich Bay SPA (designated for European golden plover, ruddy turnstone, and little tern) are also unavoidable for a route into Richborough, with several cable crossings required. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable	-3	-2	-2	Direct & Indirect	Yes

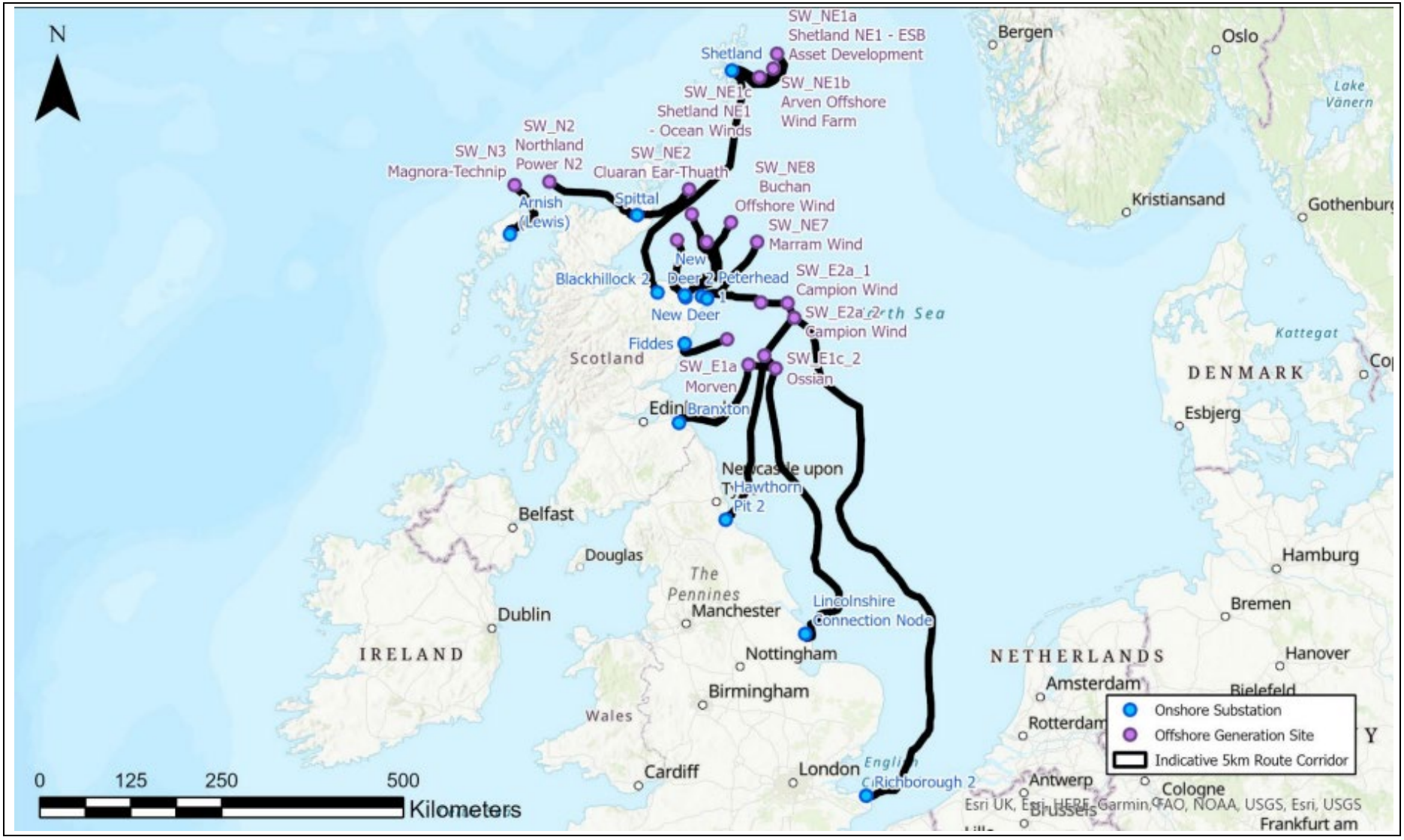
maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for significant short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. While virtually all designated sites that have features known to be sensitive to cabling activities are avoidable, some have the potential to be indirectly impacted. This includes the North East of Farnes Deep HMPA, Swallow Sand MCZ, Holderness Offshore MCZ, Inner Dowsing, Race Bank and North Ridge SAC, Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC, Dogger Bank SAC, North Norfolk Sandbanks and Saturn Reef SAC, Thanet Coast SAC, Goodwin Sands MCZ, Thanet Coast MCZ, and Solan Bank Reef SAC. Potential indirect impacts on protected features within these sites could include indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided, such as Annex I habitats. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat such as Annex I reef in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option of Stornoway, Banff, Whitehall, Seaham and Peterhead, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

Geology, Soils and Land Use (GSL) There is potential for significant negative effects in the short-term on GSL, as there are unavoidable sensitivities present for some of the routes within the option with an area of designated seabed in the Southern Trench MPA and the limited scope to avoid the North Caithness Cliffs SPA/MPA and cliffs at the Durham Coast SAC (-3). There is potential for direct and indirect effects on areas of sensitive Annex I reef, the Durham Coast SAC/SSSI which are influenced by coastal processes, and areas of high-quality agricultural land that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.	-3	-2	-2	Indirect & Direct	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	-1/+2	-1/+2	Indirect & Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).					
Material Assets and Infrastructure (MA) In general, there is potential for moderate short-term direct negative effects on MA due to assets and areas that cannot be avoided within the route corridors. There are existing cables/connections at landfalls for some routes, existing pipelines and a large number of proposed connections for some routes with the need for numerous cable/pipeline crossings (-2). Several routes pass through unavoidable military practice areas which may include live firing particularly around the Moray Firth and Cape Wrath as well as several oil and gas wells around Richborough. There are areas of high fishing density and associated port areas as well as areas of high intensity shipping and shipping lanes within the option, however these are likely avoidable, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect significant positive effects through the facilitation of new renewable energy infrastructure (+3).	-2	0/+3	0/+3	Direct & Indirect	Yes
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors	-1	-2	-2	Direct & Indirect	No

of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from the presence of onshore infrastructure during operation, including potential for visual impacts from converter stations or sub-stations in the Spittal area due to the flat topography (-2).					

ScotWind – S_009k-1			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
3483 km	3261 km	222 km	No
Routes Included in Design and Capacity			
There are 22 routes included in this design: SW_N3 to Arnish (500MW); SW_N2 to Spittal (1500MW); SW_NE2 to Spittal (1050MW); SW_NE3 to New Deer 2 (1000MW); SW_NE4 to New Deer (550MW); SW_NE6 to Peterhead2/DCSS (1000MW); SW_NE8 to Peterhead1 (1000MW); SW_NE7 to Peterhead2/DCSS (1500MW); SW_E2b to Peterhead2/DCSS (2000MW); SW_E2b to SW_E2a_1 (2000MW); SW_E3 to Fiddes (1050MW); SW_E1a to Branxton (1500MW); SW_E1a to SW_E1c_2 (2000MW); SW_E1c_1 to Hawthorn Pit (2000MW); SW_E1c_1 to SW_E1c_2 (1000MW); SW_NE1a to Shetland (500MW); SW_NE1b to Shetland (1800MW); SW_E2a_2 to SW_E1c_1 (2000MW); SW_E1c_2 to LCN (2000MW); SW_E2a_2 to Richborough (2000MW); SW_E2a_1 to SW_E2a_2 (2000MW); SW_NE1c to Shetland (500MW); Shetland Hub to Blackhillock (1800MW).			
Design Description			
Design S_009k-1 is balanced between radial and coordinated options. This includes connections between offshore generation sites such as Morven and Ossian, Muir Mhor and Campion Wind, and Campion Wind and Ossian. The option also includes longer routes which connect to the southern east coast of England at Richborough. The option contains the following proposed connections.			


N
SW_NE1a
Shetland NE1 - ESB
Asset Development
Shetland
SW_NE1b
Arven Offshore
Wind Farm
SW_NE1c
Shetland NE1
- Ocean Winds
SW_N2
Northland
Power N2
SW_N3
Magnora-Technip
SW_NE2
Cluaran Ear-Thuath
SW_NE8
Buchan
Offshore Wind
Spittal
Arnish
(Lewis)
SW_NE7
Marram Wind
New
Blackhillock 2
Deer 2
Peterhead
SW_E2a_1
Campion Wind
New Deer
SW_E2a_2
Campion Wind
Fiddes
Scotland
SW_E1a
Morven
SW_E1c_2
Ossian
Edin
Branxton
Hawthorn
Pit 2
Belfast
Douglas
The
Pennines
Manchester
Lincolnshire
Connection Node
Dublin
IRELAND
Nottingham
Birmingham
Wales
Cardiff
London
Richborough 2
Bergen
Oslo
Lake
Vänern
Kristiansand
Gothenburg
Kattegat
DENMARK
Esbjerg
Hamburg
Bremen
Hanover
NETHERLANDS
Amsterdam
Bielefeld
Rotterdam
Antwerp
Cologne
Brussels
Frankfurt am
Onshore Substation
Offshore Generation Site
Indicative 5km Route Corridor
0
125
250
500
Kilometers
Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites that cannot be avoided by cable routes within the option. The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) cannot be avoided for routes connecting to the New Deer or Peterhead areas; for all but one route the trench itself and known locations of protected habitat are avoidable. The Inner Hebrides and the Minches SAC (designated for harbour porpoise) and the North-East Lewis MPA (designated, in part, for Risso's dolphin and sand eels) cannot be avoided for a route to Arnish. The River Thurso SAC (designated for fish species including Atlantic salmon) cannot be avoided (it may be possible to drill under the sites to avoid direct impacts) and there is limited scope to avoid the North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) for a route to Spittal. The Durham Coast SAC (designated for vegetated sea cliffs) is unavoidable for a route to Hawthorn Pit (it may be possible to drill under the sites to avoid direct impacts, but indirect impacts on coastal processes within the SAC and SSSI will need to be considered). The Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) is unavoidable for a route to Branxton, with a requirement for a cable crossing within the site. The east Mainland Coast SPA (designated for breeding population of Shag, and non-breeding populations of Great northern diver, Red-throated diver, Slavonian grebe, Common scoter, Eider, Goldeneye, Long-tailed duck, Red-breasted merganser, Scaup, Shag and Velvet scoter) cannot be avoided for the routes to Shetland Hub and the Moray Firth SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) cannot be avoided for the route from Shetland Hub to Blackhillock. The are several routes that need to pass through the Southern North Sea SAC (designated for harbour porpoise), including to LCN and Richborough, with potential to require many cable crossings; the routes into LCN also cannot avoid the Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern), with cable/pipeline crossings also required within this site. The Sandwich Bay SAC (designated for dune habitats) and the Thanet Coast and Sandwich Bay SPA (designated for European golden	-3	-2	-2	Direct & Indirect	Yes

plover, ruddy turnstone, and little tern) are also unavoidable for a route into Richborough, with several cable crossings required. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for significant short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. While virtually all designated sites that have features known to be sensitive to cabling activities are avoidable, some have the potential to be indirectly impacted. This includes the North East of Farnes Deep HMPA, Swallow Sand MCZ, Holderness Offshore MCZ, Inner Dowsing, Race Bank and North Ridge SAC, Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC, Dogger Bank SAC, North Norfolk Sandbanks and Saturn Reef SAC, Thanet Coast SAC, Goodwin Sands MCZ, Thanet Coast MCZ, and Solan Bank Reef SAC. Potential indirect impacts on protected features within these sites could include indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided, such as Annex I habitats. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat such as Annex I reef in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option of Stornoway, Banff, Whitehall, Seaham and Peterhead, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure (-1).	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).					
Geology, Soils and Land Use (GSL) There is potential for significant negative effects in the short-term on GSL, as there are unavoidable sensitivities present for some of the routes within the option with an area of designated seabed in the Southern Trench MPA and the limited scope to avoid the North Caithness Cliffs SPA/MPA and cliffs at the Durham Coast SAC (-3). There is potential for direct and indirect effects on areas of sensitive Annex I reef, the Durham Coast SAC/SSSI which are influenced by coastal processes, and areas of high-quality agricultural land that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.	-3	-2	-2	Indirect & Direct	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	-1/+2	-1/+2	Indirect & Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).					
Material Assets and Infrastructure (MA) In general, there is potential for moderate short-term direct negative effects on MA due to assets and areas that cannot be avoided within the route corridors. There are existing cables/connections at landfalls for some routes, existing pipelines and a large number of proposed connections for some routes with the need for numerous cable/pipeline crossings (-2). Several routes pass through unavoidable military practice areas which may include live firing particularly around Cape Wrath as well as several oil and gas wells around Richborough. There are areas of high fishing density and associated port areas as well as areas of high intensity shipping and shipping lanes within the option, however these are likely avoidable, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect significant positive effects through the facilitation of new renewable energy infrastructure (+3).	-2	0/+3	0/+3	Direct & Indirect	Yes
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes

Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from the presence of onshore infrastructure during operation, including potential for visual impacts from converter stations or sub-stations in the Spittal area due to the flat topography (-2).	-3	-2	-2	Direct & Indirect	No

ScotWind – S_009s			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
3739 km	3467 km	271 km	Yes
Routes Included in Design and Capacity			
There are 23 routes included in this design: SW_N3 to Arnish (500MW); SW_N2 to Spittal (1500MW); SW_NE3 to New Deer 2 (1000MW); SW_NE4 to New Deer 2 (550MW); SW_NE6 to Peterhead2/DCSS (1000MW); SW_NE8 to Peterhead1 (1000MW); SW_NE7 to Peterhead2/DCSS (1500MW); SW_E2b to Peterhead2/DCSS (2000MW); SW_E2b to SW_E2a_1 (2000MW); SW_E3 to Fiddes (1050MW); SW_E1a to Branxton (1500MW); SW_E1a to SW_E1c_2 (2000MW); SW_E1c_1 to Lincolnshire connection node (2000MW); SW_E1c_1 to SW_E1c_2 (1000MW); SW_NE1a to Shetland (500MW); SW_NE1b to Shetland (1800MW); SW_E2a_2 to SW_E1c_1 (2000MW); SW_E1c_2 to Weston Marsh (2000MW); SW_E2a_2 to Richborough (2000MW); SW_E2a_1 to SW_E2a_2 (2500MW); SW_NE1c to Shetland (500MW); Shetland Hub to Blackhillock (1800MW).			
Design Description			
Design S_009s is balanced between radial and coordinated options. This includes connections between offshore generation sites such as Morven and Ossian, Muir Mhor and Campion, and Campion and Ossian. The option also includes longer routes that connect to the south eastern coast of England at Weston Marsh and Richborough. The option contains the following proposed offshore and onshore connections/reinforcements.			


N
SW_NE1a
Shetland NE1 - ESB
Asset Development
Shetland
SW_NE1b
Arven Offshore
Wind Farm
SW_NE1c
Shetland NE1
- Ocean Winds
SW_N2
Northland
Power N2
SW_N3
Magnora-Technip
SW_NE2
Cluaran Ear-Thuath
SW_NE8
Buchan
Offshore Wind
Spittal
Arnish
(Lewis)
SW_NE7
Marram Wind
SW_NE4
Caledonia Offshore
Wind Farm
Peterhead
SW_E2b
Muir Mhor
Blackhillock 2
New Deer 2
SW_E2a_2
Campion Wind
Fiddes
SW_E1c_3
SW_E1a
Morven
SW_E1c_2
Ossian
Edin
Branxton
Scotland
Newcastle upon
Tyne
Belfast
Douglas
The
Pennines
Manchester
Lincolnshire
Connection Node
Dublin
IRELAND
Nottingham
Weston Marsh
Birmingham
Wales
Cardiff
London
Richborough 2
Bergen
Oslo
Lake
Vänern
Kristiansand
Gothenburg
Kattegat
DENMARK
Esbjerg
Hamburg
Bremen
Hanover
Bielefeld
NETHERLANDS
Amsterdam
Rotterdam
Antwerp
Brussels
Frankfurt am
Onshore Substation
Offshore Generation
Indicative 5km Route Corridor
0
125
250
500
Kilometers
Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites that cannot be avoided by cable routes within the option. The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) cannot be avoided for routes connecting to the New Deer or Peterhead areas; for all but one route the trench itself and known locations of protected habitat are avoidable. The Inner Hebrides and the Minches SAC (designated for harbour porpoise) and the North-East Lewis MPA (designated, in part, for Risso's dolphin and sand eels) cannot be avoided for a route to Arnish. The River Thurso SAC (designated for fish species including Atlantic salmon) cannot be avoided and there is limited scope to avoid the North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) for a route to Spittal. The Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) is unavoidable for a route to Branxton, with a requirement for a cable crossing within the site. The east Mainland Coast SPA (designated for breeding population of Shag, and non-breeding populations of Great northern diver, Red-throated diver, Slavonian grebe, Common scoter, Eider, Goldeneye, Long-tailed duck, Red-breasted merganser, Scaup, Shag and Velvet scoter) cannot be avoided for the routes to Shetland Hub and the Moray Firth SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) cannot be avoided for the route from Shetland Hub to Blackhillock. The are several routes that need to pass through the Southern North Sea SAC (designated for harbour porpoise), including to LCN, Richborough and Weston Marsh, with potential to require many cable crossings; those routes into LCN and Weston Marsh also cannot avoid the Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern), with cable/pipeline crossings also required within this site. The Sandwich Bay SAC (designated for dune habitats) and the Thanet Coast and Sandwich Bay SPA (designated for European golden plover, ruddy turnstone, and little tern) are also unavoidable for a route into Richborough, with several cable crossings required. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning	-3	-2	-2	Direct & Indirect	Yes

phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for significant short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. While virtually all designated sites that have features known to be sensitive to cabling activities are avoidable, some have the potential to be indirectly impacted. This includes the North East of Farnes Deep HMPA, Swallow Sand MCZ, Holderness Offshore MCZ, Inner Dowsing, Race Bank and North Ridge SAC, Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC, Dogger Bank SAC, North Norfolk Sandbanks and Saturn Reef SAC, Thanet Coast SAC, Goodwin Sands MCZ, Thanet Coast MCZ, and Solan Bank Reef SAC. Potential indirect impacts on protected features within these sites could include indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided, such as Annex I habitats. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat such as Annex I reef in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option of Stornoway, Banff, Whitehall and Peterhead, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	-1/+2	-1/+2	Indirect & Direct	Yes

Geology, Soils and Land Use (GSL) There is potential for significant negative effects in the short-term on GSL, as there are unavoidable sensitivities present for some of the routes within the option with an area of designated seabed in the Southern Trench MPA and the limited scope to avoid the North Caithness Cliffs SPA/MPA (-3). There is potential for direct and indirect effects on areas of sensitive Annex I reef and sandbank and areas of high quality agricultural land that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.	-3	-2	-2	Indirect & Direct	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	-1/+2	-1/+2	Indirect & Direct	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).					
Material Assets and Infrastructure (MA) In general, there is potential for moderate short-term direct negative effects on MA due to assets and areas that cannot be avoided within the route corridors. There are existing cables/connections at landfalls for some routes, existing pipelines and a large number of proposed connections for some routes with the need for numerous cable/pipeline crossings (-2). Several routes pass through unavoidable military practice areas which may include live firing particularly around the Moray Firth and Cape Wrath as well as several oil and gas wells around Richborough. There are areas of high fishing density and associated port areas as well as areas of high intensity shipping and shipping lanes within the option, however these are likely avoidable, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect significant positive effects through the facilitation of new renewable energy infrastructure (+3).	-2	0/+3	0/+3	Indirect & Direct	Yes
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There are registered Parks and Gardens and scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There is potential for negative effects on L with the crossing of either the Lake District or Yorkshire Dales National Park for the construction of the CNLC OHL route (-2). There are major settlements within route corridors of the option, however these can be avoided. In	-2	-2	-2	Direct & Indirect	Yes

general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). Generally, the landscape types in the vicinity of existing substations and proposed areas are of relatively higher sensitivity to development (e.g., due to rural nature), the Lake District and Yorkshire Dales National Park are likely to be of higher sensitivity to development.					

ScotWind – S_011d			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
4940 km	4672 km	267 km	No
Routes Included in Design and Capacity			
There are 24 routes included in this design: SW_N3 to Arnish (500MW); SW_N2 to Spittal (1500MW); SW_NE2 to Spittal (1050MW); SW_NE3 to New Deer 2 (1000MW); SW_NE4 to New Deer (550MW); SW_NE6 to Peterhead2/DCSS (1000MW); SW_NE8 to Peterhead1 (1000MW); SW_NE7 to Peterhead2/DCSS (1500MW); SW_E2b to Peterhead2/DCSS (2000MW) SW_E2b to SW_E2a_1 (2000MW); SW_E3 to Fiddes (1050MW); SW_E2a_1 to SW_E2a_2 (1500MW); SW_E1a to LCN (2000MW); SW_E1a to SW_E1c_2 (1000MW); SW_E1c_1 to Bacton (2000MW); SW_E1c_1 to SW_E1c_2 (2000MW); SW_NE1c to Shetland (500MW); SW_NE1b to Shetland (1800MW); SW_NE1a to Shetland (500MW); Shetland Hub to Blackhillock (1800MW); SW_E2a_2 to SW_E1c_1 (1000MW); SW_E1c_2 to Norwich Main (2000MW); SW_E2a_1 to EACN (2000MW); SW_E2a_2 to Richborough 2 (2000MW).			
Design Description			
Design S_011d is balanced between radial and coordinated options. This includes connections between offshore generation sites such as Morven and Ossian, Muir Mhor and Campion Wind, and Campion Wind and Ossian. The option also includes longer routes which connect to the southern east coast of England at Richborough. The option contains the following proposed connections.			


N
SW_NE1a
Shetland NE1 - ESB
Asset Development
Shetland
SW_NE1b
Arven Offshore
Wind Farm
SW_NE1c
Shetland NE1
- Ocean Winds
SW_N2
Northland
Power N2
SW_N3
Magnora-Technip
SW_NE2
Cluaran Ear-Thuath
SW_NE8
Buchan
Offshore Wind
Arnish
(Lewis)
Spittal
SW_NE7
Marram Wind
New
Blackhillock 2
Deer 2
Peterhead
1
SW_E2a_1
Campion Wind
New Deer
SW_E2a_2
Campion Wind
Fiddes
Scotland
SW_E1a
Morven
SW_E1c_2
Ossian
Edinburgh
Newcastle upon
Tyne
Belfast
Douglas
The
Pennines
Manchester
Dublin
IRELAND
Lincolnshire
Connection Node
Nottingham
Bacton
Norwich
Birmingham
Wales
East Anglia
Coastal Node
Cardiff
London
Richborough 2
Bergen
Oslo
Lake
Vänern
Kristiansand
Gothenburg
Kattegat
DENMARK
Esbjerg
Hamburg
Bremen
Hanover
NETHERLANDS
Amsterdam
Bielefeld
Rotterdam
Antwerp
Cologne
Brussels
Frankfurt am
Onshore Substation
Offshore Generation Site
Indicative 5km Route Corridor
0
125
250
500
Kilometers
Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites that cannot be avoided by cable routes within the option. The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) cannot be avoided for routes connecting to the New Deer or Peterhead areas; for all but one route the trench itself and known locations of protected habitat are avoidable. The Inner Hebrides and the Minches SAC (designated for harbour porpoise) and the North-East Lewis MPA (designated, in part, for Risso's dolphin and sand eels) cannot be avoided for a route to Arnish. The River Thurso SAC (designated for fish species including Atlantic salmon) cannot be avoided (it may be possible to drill under the sites to avoid direct impacts) and there is limited scope to avoid the North Caithness Cliffs SPA (designated for breeding seabirds such as peregrine and guillemot) for a route to Spittal. The east Mainland Coast SPA (designated for breeding population of Shag, and non-breeding populations of Great northern diver, Red-throated diver, Slavonian grebe, Common scoter, Eider, Goldeneye, Long-tailed duck, Red-breasted merganser, Scaup, Shag and Velvet scoter) cannot be avoided for the routes to Shetland Hub and the Moray Firth SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) cannot be avoided for the route from Shetland Hub to Blackhillock. The are several routes that need to pass through the Southern North Sea SAC (designated for harbour porpoise), including to Norwich, Bacton, EACN, LCN and Richborough, with potential to require many cable crossings; those routes into Norwich, Bacton and LCN also cannot avoid the Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern), with cable/pipeline crossings also required within this site. The Sandwich Bay SAC (designated for dune habitats) and the Thanet Coast and Sandwich Bay SPA (designated for European golden plover, ruddy turnstone, and little tern) are also unavoidable for a route into Richborough, with several cable crossings required. The Outer Thames Estuary SPA and Holland Haven Marshes SSSI are unavoidable for the route into EACN. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3).	-3	-2	-2	Direct & Indirect	Yes

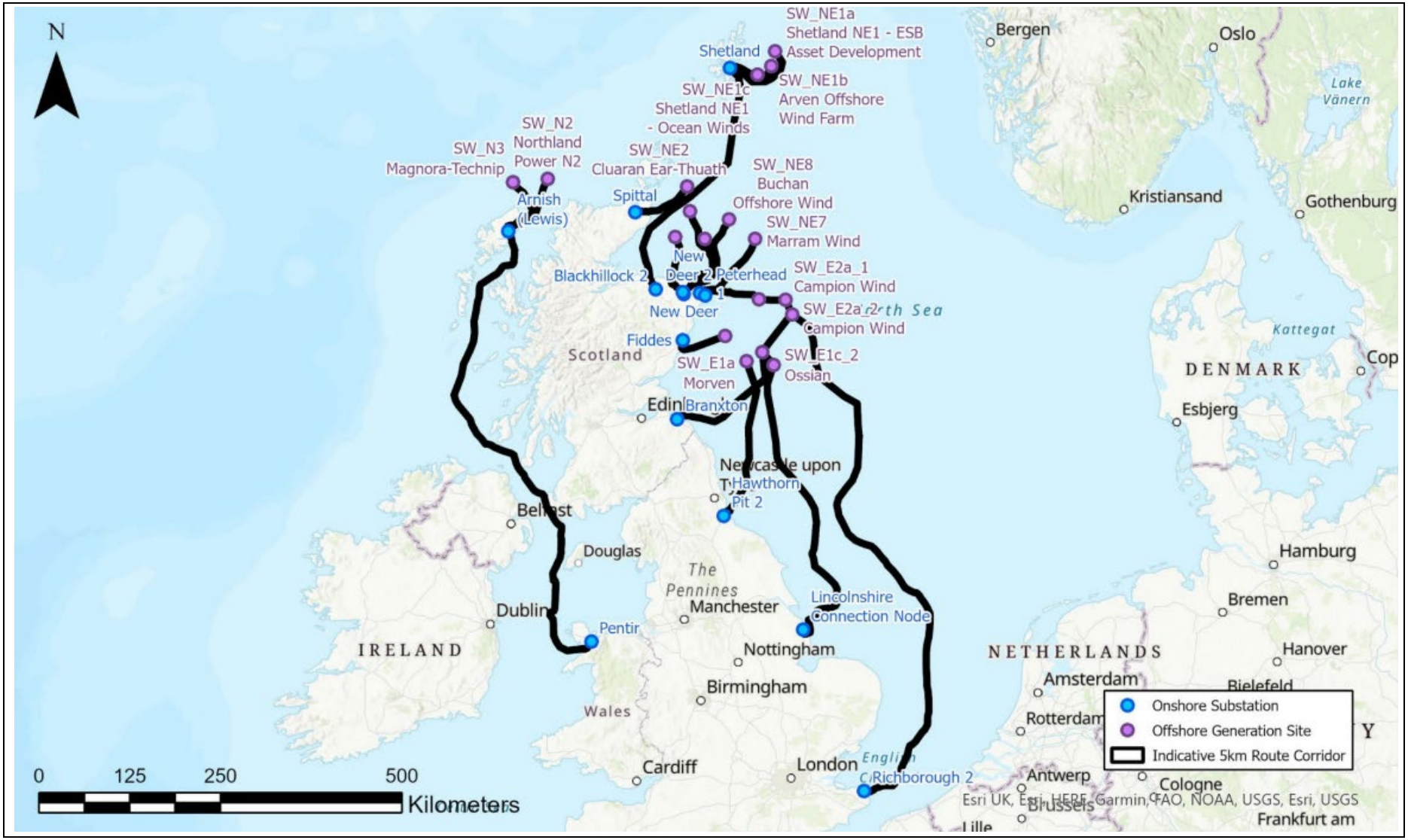
There are also several designated sites that are avoidable within the route corridors, but for which there is potential for significant short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. While virtually all designated sites that have features known to be sensitive to cabling activities are avoidable, some have the potential to be indirectly impacted. This includes the Cromer Shoal Chalk Beds MCZ, Haisborough, Hammond and Winterton SAC, and North Norfolk Sandbanks and Saturn Reef SAC as there would be a need for cable crossing in proximity to these sites for routes to Norwich and Bacton. Other sites for which there may be potential for indirect impacts includes the North East of Farnes Deep HMPA, Swallow Sand MCZ, Holderness Offshore MCZ, Inner Dowsing, Race Bank and North Ridge SAC, Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC, Dogger Bank SAC, North Norfolk Sandbanks and Saturn Reef SAC, Cromer Shoal and Chalk Beds MCZ, Haisborough, Hammond and Winterton SAC, Margate and Long Sands SAC, Blackwater, Crouch, Roach and Colne Estuaries MCZ, Thanet Coast SAC, Goodwin Sands MCZ, Thanet Coast MCZ, and Solan Bank Reef SAC. Potential indirect impacts on protected features within these sites could include indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided, such as Annex I habitats. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat such as Annex I reef in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is potential for negative effects on PHH, as there are major settlements within route corridors of the option of Stornoway, Banff, Whitehall, Seaham and Peterhead, these can be avoided, however the route to the East Anglia Coastal Node is a constrained landfall due to the urban areas of Frinton-on-Sea and Holland-on-Sea and environmental designations (-1). There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure (-1).	-1	-1/+2	-1/+2	Direct & Indirect	Yes

There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).					
Geology, Soils and Land Use (GSL) There is potential for significant negative effects in the short-term on GSL, as there are unavoidable sensitivities present for some of the routes within the option with an area of designated seabed in the Southern Trench MPA and the limited scope to avoid the North Caithness Cliffs SPA/MPA and cliffs at the Durham Coast SAC (-3). There is potential for direct and indirect effects on areas of sensitive Annex I reef, Annex I sandbanks, the Durham Coast SAC/SSSI which are influenced by coastal processes, and areas of excellent, high and good quality agricultural land that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.	-3	-2	-2	Indirect & Direct	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	-1/+2	-1/+2	Indirect & Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).					
Material Assets and Infrastructure (MA) In general, there is potential for moderate short-term direct negative effects on MA due to assets and areas that cannot be avoided within the route corridors. There are existing cables/connections at landfalls for some routes, existing pipelines and a large number of proposed connections for some routes with the need for numerous cable/pipeline crossings (-2). Several routes pass through unavoidable military practice areas which may include live firing particularly around Cape Wrath as well as several oil and gas wells around Richborough. There are areas of high fishing density and associated port areas as well as areas of high intensity shipping and shipping lanes within the option, however these are likely avoidable, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect significant positive effects through the facilitation of new renewable energy infrastructure (+3).	-2	0/+3	0/+3	Direct & Indirect	Yes
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There is potential for negative effects on L, as the Broads National Park and Norfolk Coast AONB cannot be avoided (-2). There are major settlements within route corridors of the	-2	-2	-2	Direct & Indirect	No

option, however, only some of these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from the presence of onshore infrastructure during operation, including potential for visual impacts from converter stations or sub-stations in the Spittal area due to the flat topography (-2).					

ScotWind – S_016g			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
4172 km	3939 km	232 km	No
Routes Included in Design and Capacity			
There are 23 routes included in this design: SW_N3 to Arnish (500MW); SW_N2 to Arnish (1500MW); SW_NE2 to Spittal (1050MW); SW_NE3 to New Deer 2 (1000MW); SW_NE4 to New Deer (550MW); SW_NE6 to Peterhead2/DCSS (1000MW); SW_NE8 to Peterhead1 (1000MW); SW_NE7 to Peterhead2/DCSS (1500MW); SW_E2b to Peterhead2/DCSS (2000MW); SW_E2b to SW_E2a_1 (2000MW); SW_E3 to Fiddes (1050MW); SW_E2a_1 to SW_E2a_2 (2500MW); SW_E1a to Hawthorn Pit (1500MW); SW_E1c_1 to Branxton (2000MW); SW_E1c_1 to SW_E1c_2 (1000MW); SW_NE1c to Shetland (500MW); SW_NE1b to Shetland (1800MW); SW_NE1a to Shetland (500MW); Shetland Hub to Blackhillock (1800MW); SW_E2a_2 to SW_E1c_1 (2000MW); SW_E1c_2 to LCN (2000MW); SW_E2a_2 to Richborough (2000MW) Arnish to Pentir (2000MW).			
Design Description			
Design S_016g is balanced between radial and coordinated options. This includes connections between offshore generation sites such as Muir Mhor and Campion Wind, and Campion Wind and Ossian. The option also includes longer routes which connect to the southern east coast of England at Richborough, and to Pentir from Arnish on the west coast. The option contains the following proposed connections.			


N
SW_NE1a
Shetland NE1 - ESB
Asset Development
Shetland
SW_NE1b
Arven Offshore
Wind Farm
SW_NE1c
Shetland NE1
- Ocean Winds
SW_N2
Northland
Power N2
SW_N3
Magnora-Technip
SW_NE2
Cluaran Ear-Thuath
SW_NE8
Buchan
Offshore Wind
Spittal
Arnish
(Lewis)
SW_NE7
Marram Wind
New
Blackhillock 2
Deer 2
Peterhead
SW_E2a_1
Campion Wind
New Deer
SW_E2a_2
Campion Wind
Fiddes
Scotland
SW_E1a
Morven
SW_E1c_2
Ossian
Edin
Branxton
Newcastle upon
Hawthorn
Pit 2
Belfast
Douglas
The
Pennines
Manchester
Lincolnshire
Connection Node
Dublin
Pentir
IRELAND
Nottingham
Birmingham
Wales
Cardiff
London
Richborough 2
Bergen
Oslo
Lake
Vänern
Kristiansand
Gothenburg
Kattegat
DENMARK
Esbjerg
Hamburg
Bremen
Hanover
NETHERLANDS
Amsterdam
Rotterdam
Antwerp
Brussels
Cologne
Frankfurt am
Lille
Onshore Substation
Offshore Generation Site
Indicative 5km Route Corridor
0
125
250
500
Kilometers
Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites that cannot be avoided by cable routes within the option. The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) cannot be avoided for routes connecting to the New Deer or Peterhead areas; for all but one route the trench itself and known locations of protected habitat are avoidable. The Inner Hebrides and the Minches SAC (designated for harbour porpoise) and the North-East Lewis MPA (designated, in part, for Risso's dolphin and sand eels) cannot be avoided for routes to Arnish. The Durham Coast SAC (designated for vegetated sea cliffs) is unavoidable for a route to Hawthorn Pit (it may be possible to drill under the sites to avoid direct impacts, but indirect impacts on coastal processes within the SAC and SSSI will need to be considered). The east Mainland Coast SPA (designated for breeding population of Shag, and non-breeding populations of Great northern diver, Red-throated diver, Slavonian grebe, Common scoter, Eider, Goldeneye, Long-tailed duck, Red-breasted merganser, Scaup, Shag and Velvet scoter) cannot be avoided for the routes to Shetland Hub and the Moray Firth SPA (designated for breeding Red-throated diver and non-breeding Great northern diver, and Slavonian grebe) cannot be avoided for the route from Shetland Hub to Blackhillock. The are several routes that need to pass through the Southern North Sea SAC (designated for harbour porpoise), including to LCN and Richborough, with potential to require many cable crossings; the route into LCN also cannot avoid the Greater Wash SPA (designated for non-breeding red-throated diver, common scoter, and little gull, and breeding sandwich tern, common tern and little tern), with cable/pipeline crossings also required within this site. The Sandwich Bay SAC (designated for dune habitats) and the Thanet Coast and Sandwich Bay SPA (designated for European golden plover, ruddy turnstone, and little tern) are also unavoidable for the route into Richborough, with several cable crossings required within these sites. The Inner Hebrides and the Minches SAC, Sea of the Minches MPA, North Anglesey Marine SAC, North East Lewis MPA and Afon Gwyrfai a Llyn Cwellyn SAC/SSSI are also not possible to avoid for the route from Arnish to Pentir, and there is a need for cable/pipeline crossings within most of these sites. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when	-3	-2	-2	Direct & Indirect	Yes

considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for significant short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. While virtually all designated sites that have features known to be sensitive to cabling activities are avoidable, some have the potential to be indirectly impacted. This includes the North East of Farnes Deep HMPA, Swallow Sand MCZ, Holderness Offshore MCZ, Inner Dowsing, Race Bank and North Ridge SAC, Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC, Dogger Bank SAC, North Norfolk Sandbanks and Saturn Reef SAC, Thanet Coast SAC, Goodwin Sands MCZ, Thanet Coast MCZ, Luce Bay and Sands SAC and Anglesey Coast: Saltmarsh SAC. Potential indirect impacts on protected features within these sites could include indirect damage to habitats sedentary species and disturbance and displacement of mobile species. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided, such as Annex I habitats. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat such as Annex I reef in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option of Stornoway, Banff, Whitehall, Seaham and Peterhead, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure (-1). There is potential for positive effects from facilitation of new renewable energy infrastructure (+2).	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

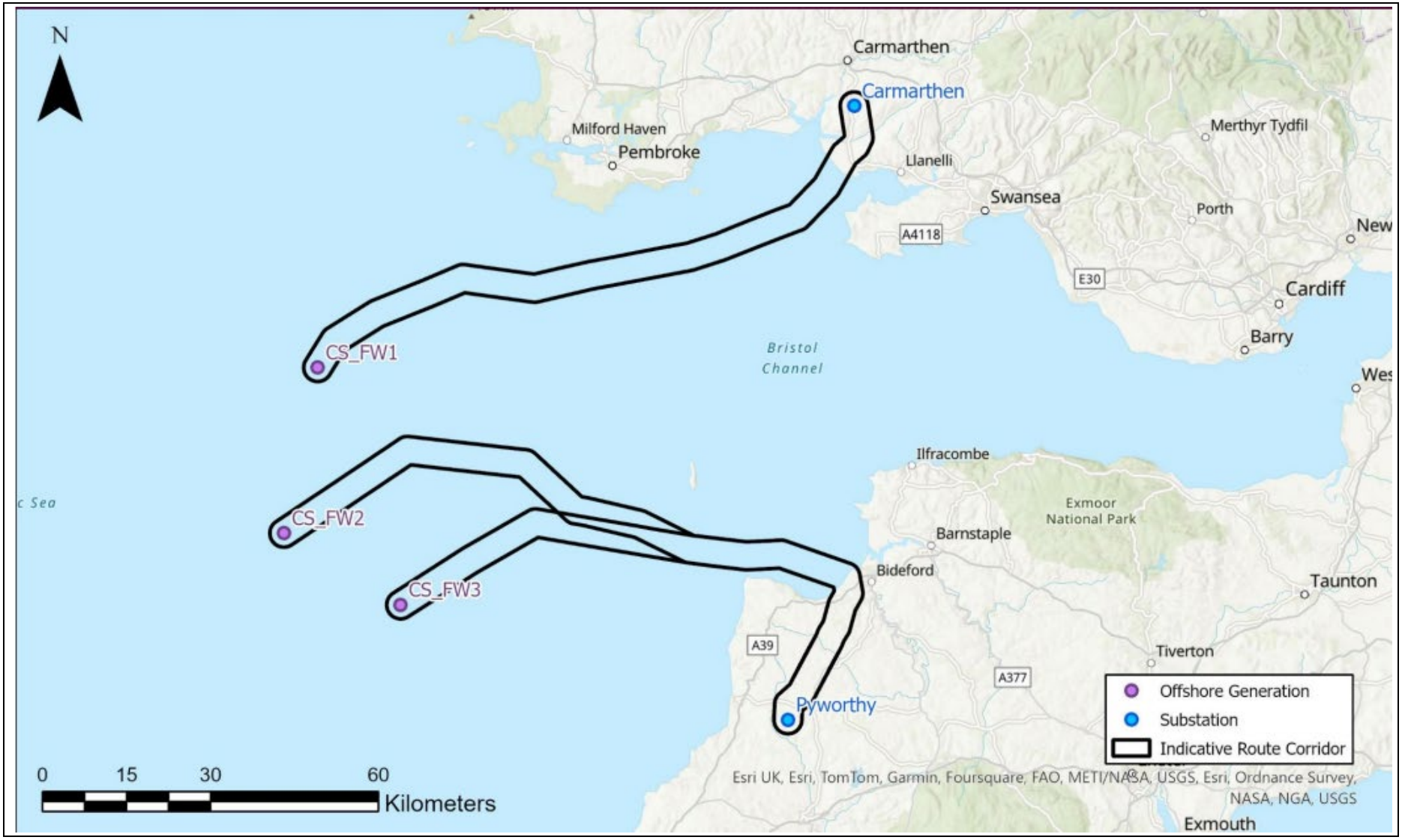
Geology, Soils and Land Use (GSL) There is potential for significant negative effects in the short-term on GSL, as there are unavoidable sensitivities present for some of the routes within the option with an area of designated seabed in the Southern Trench MPA and the limited scope to avoid the cliffs at the Durham Coast SAC (-3). There is potential for direct and indirect effects on areas of sensitive Annex I reef and sandbanks, the Durham Coast SAC/SSSI which are influenced by coastal processes, and areas of high and very-high quality agricultural land, and a dumping ground that are within the route corridors and cannot be avoided. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). Cliffs limit landfall opportunities along the coast. There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.	-3	-2	-2	Indirect & Direct	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).	-1	-1/+2	-1/+2	Indirect & Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is	-1	-1/+2	-1/+2	Indirect & Indirect	Yes

also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+2).					
Material Assets and Infrastructure (MA) In general, there is potential for moderate short-term direct negative effects on MA due to assets and areas that cannot be avoided within the route corridors. There are existing cables/connections at landfalls for some routes, existing pipelines and a large number of proposed connections for some routes with the need for numerous cable/pipeline crossings (-2). Several routes pass through unavoidable military practice areas which may include live firing particularly around the Moray Firth and Cape Wrath as well as several oil and gas wells around Richborough. There are areas of high fishing density and associated port areas as well as areas of high intensity shipping and shipping lanes within the option, however these are likely avoidable, and short-term indirect effects on avoidable material assets and infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium-term and long-term indirect significant positive effects through the facilitation of new renewable energy infrastructure (+3).	-2	0/+3	0/+3	Direct & Indirect	Yes
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are major settlements within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning	-1	-2	-2	Direct & Indirect	No

phases along cable routes (-1). There is potential for long-term effects from the presence of onshore infrastructure during operation, including potential for visual impacts from converter stations or sub-stations in the Spittal area due to the flat topography (-2).					

F.3.3 HNDFUE Celtic Sea Options

Celtic Sea – C_011a			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
369 km	299 km	69 km	No
Routes Included in Design and Capacity			
There are 3 routes included in this design: PDA1 to Carmarthen (1,500MW); PDA2 to North Devon (Alverdiscott 2) (1,500MW); PDA3 to North Devon (Alverdiscott 2) (1,500MW)			
Design Description			
Design C_011a is balanced between radial and coordinated options and involves the following proposed connections.			


N
Carmarthen
Carmarthen
Milford Haven
Pembroke
Llanelli
Merthyr Tydfil
Swansea
Porth
A4118
E30
Cardiff
Barry
CS_FW1
Bristol
Channel
Ilfracombe
CS_FW2
Exmoor
National Park
Barnstaple
Bideford
CS_FW3
Taunton
A39
Tiverton
A377
Pyworthy
Offshore Generation
Substation
Indicative Route Corridor
0
15
30
60
Kilometers
Esri UK, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, Esri, Ordnance Survey,
NASA, NGA, USGS
Exmouth

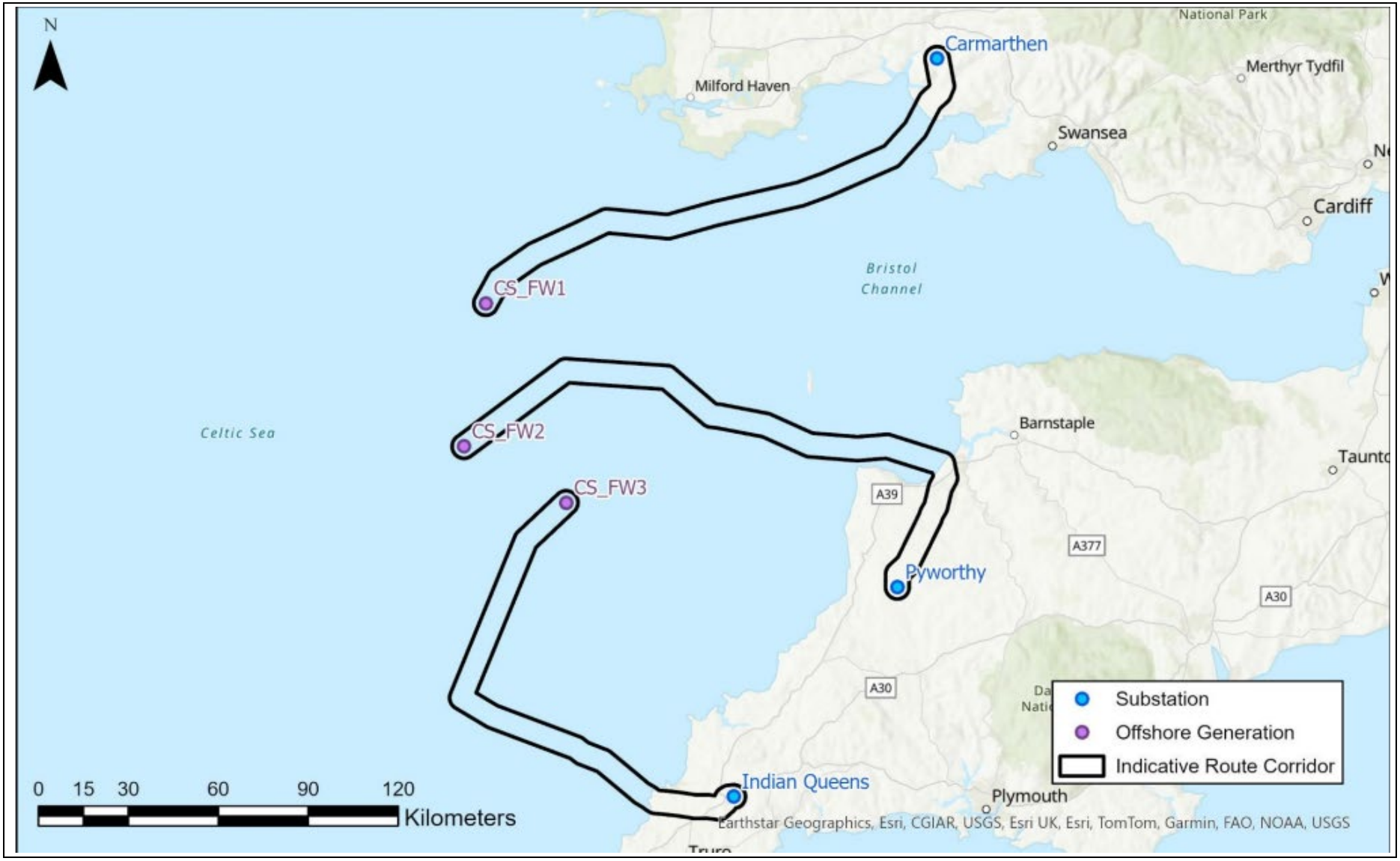
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. Large distances of cabling cannot be avoided within the Bristol Channel Approaches SAC (designated for harbour porpoise) for routes into Carmarthen and North Devon. The Carmarthen Bay and Estuaries SAC (designated for estuaries, subtidal sandbanks, mudflats and sandflats, shallow inlets and bays, Salicornia habitat, Atlantic salt meadows, Twaite and allis shad, river and sea lamprey and otter), Carmarthen Bay SPA (designated for common scoter), and Pembrey Coast SSSI (designated for intertidal, saltmarsh and sand dune habitats) are unavoidable for the route to Carmarthen. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for significant short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes NRW Key Sensitive Habitats for the route to Carmarthen. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. There is potential for short-term negative effects on	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).					
Geology, Soils and Land Use (GSL) The Mermaid's Pool to Rowden Gut SSSI (designated for geological features) is unavoidable for the route to North Devon. There is potential for direct and indirect effects for designated features within this site in the construction and decommissioning phases and during cable maintenance activities (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure. Agricultural lands within the onshore routes are primarily of good to moderate quality, and areas of very high quality are avoidable.	-2	0	0	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and pipelines and military areas, and for onshore infrastructure (-2). There is also potential for short-term indirect effects on avoidable material assets and infrastructure, such as cables and pipelines and onshore infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as the routes to North Devon share a similar corridor and landfall in the same location as X-links, and the route to Carmarthen crosses the Llyr wind farm cables. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks, scheduled monuments and listed buildings within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There are urban areas within route corridors of the option, however these can be avoided. There are areas of landscape sensitivity that cannot be avoided along the coastline at North Devon; the North Devon AONB, Hartland Heritage Coast and South West Coast Path	-2	-1	-1	Indirect	No

cannot be avoided, and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.					

Celtic Sea – C_011c			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
361km	301km	60km	No
Routes Included in Design and Capacity			
There are 3 routes included in this design: PDA1 to Carmarthen (1,500MW); PDA2 to North Devon (Alverdiscott 2) (1,500MW); PDA3 to Indian Queens (1,500).			
Design Description			
Design C_011c is a radial option and involves the following proposed connections.			


N
National Park
Carmarthen
Merthyr Tydfil
Milford Haven
Swansea
Cardiff
Bristol Channel
CS_FW1
Celtic Sea
CS_FW2
Barnstaple
CS_FW3
A39
A377
Pyworthy
A30
A30
Substation
Offshore Generation
Indicative Route Corridor
0 15 30 60 90 120
Kilometers
Indian Queens
Plymouth
Earthstar Geographics, Esri, CGIAR, USGS, Esri UK, Esri, TomTom, Garmin, FAO, NOAA, USGS

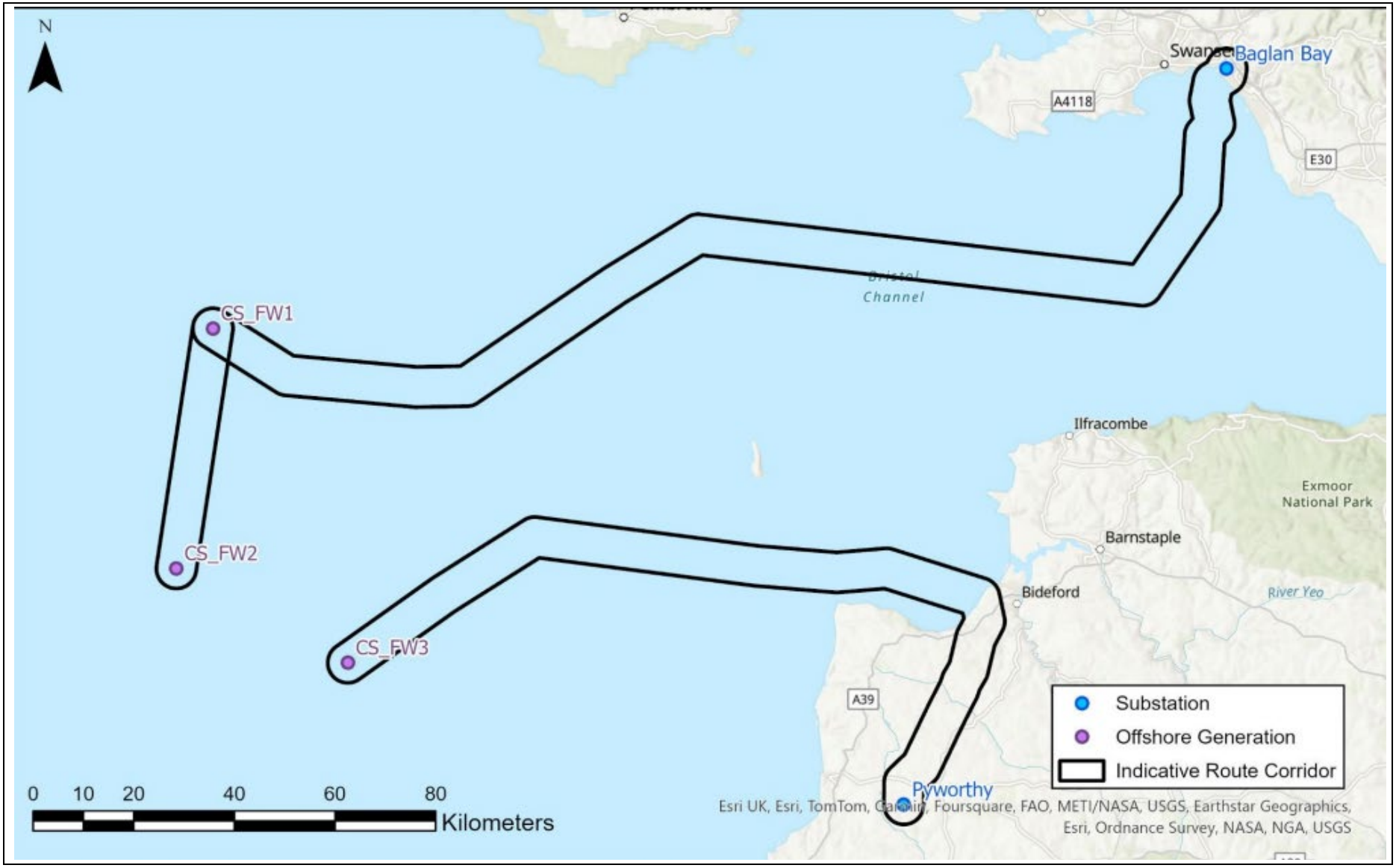
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. Large distances of cabling cannot be avoided within the Bristol Channel Approaches SAC (designated for harbour porpoise) for routes into Carmarthen, North Devon and Indian Queens. The Carmarthen Bay and Estuaries SAC (designated for estuaries, subtidal sandbanks, mudflats and sandflats, shallow inlets and bays, Salicornia habitat, Atlantic salt meadows, Twaite and allis shad, river and sea lamprey and otter), Carmarthen Bay SPA (designated for common scoter), and Pembrey Coast SSSI (designated for intertidal, saltmarsh and sand dune habitats) are unavoidable for the route to Carmarthen, and the Breney Common and Goss and Tregoss Moors SAC (designated for heaths and mires), Kelsey Head SSSI, Penhale Dunes SSSI and Cornwall Moors SSSI are unavoidable for the route to Indian Queens. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, including the Newquay and the Gannet MCZ (designated for a variety of habitats and species, including exposed sandy beaches and rocky shores, sediment, sand and mud communities, saltmarsh and giant goby, and identified as a site sensitive to pressures associated with cabling activities) for the route to Indian Queens, but for which there is potential for significant short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes NRW Key Sensitive Habitats for the route to Carmarthen, and areas of Annex I reef for the route to Indian Queens. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2).	-3	-2	-2	Direct and Indirect	Yes

In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Geology, Soils and Land Use (GSL) The Mermaid's Pool to Rowden Gut SSSI (designated for geological features) is unavoidable for the route to North Devon and there are unavoidable areas of Annex I reef within the route to Indian Queens. There is potential for direct and indirect effects for these sensitive features in the construction and decommissioning phases and during cable maintenance activities (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure. Agricultural lands within the onshore routes are primarily of good to moderate quality, and areas of very high quality are avoidable.	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and pipelines and military areas, and for onshore infrastructure (-2). There is also potential for short-term indirect effects on avoidable material assets and infrastructure, such as cables and pipelines and onshore infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as the route to North Devon shares a landfall in the same location as X-links, and the route to Carmarthen crosses the Llyr wind farm cables. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks, scheduled monuments and listed buildings within route corridors of the option; however, these are all avoidable. There is	-1	0	0	Direct & Indirect	Yes

potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).					
Landscape / Seascape and Visual Amenity (L) There are urban areas within route corridors of the option, however these can be avoided. There are areas of landscape sensitivity that cannot be avoided along the coastline at North Devon; the North Devon AONB, Hartland Heritage Coast and South West Coast Path cannot be avoided, and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.	-2	-1	-1	Indirect	No

Celtic Sea – C_011h			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
297 km	267 km	29 km	No
Routes Included in Design and Capacity			
There are 3 routes included in this design: PDA1 to Baglan Bay (2 x1.5GW); PDA2 to PDA1 (1,500MW); PDA3 to North Devon (Alverdiscott 2) (1,500MW).			
Design Description			
Design C_011h is a semi-coordinated option and involves the following proposed connections.			


N
Swansea
Baglan Bay
A4118
E30
Bristol Channel
CS_FW1
CS_FW2
CS_FW3
Ilfracombe
Exmoor National Park
Barnstaple
Bideford
River Yeo
A39
Substation
Offshore Generation
Indicative Route Corridor
0 10 20 40 60 80
Kilometers
Pyworthy
Esri UK, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, Earthstar Geographics, Esri, Ordnance Survey, NASA, NGA, USGS

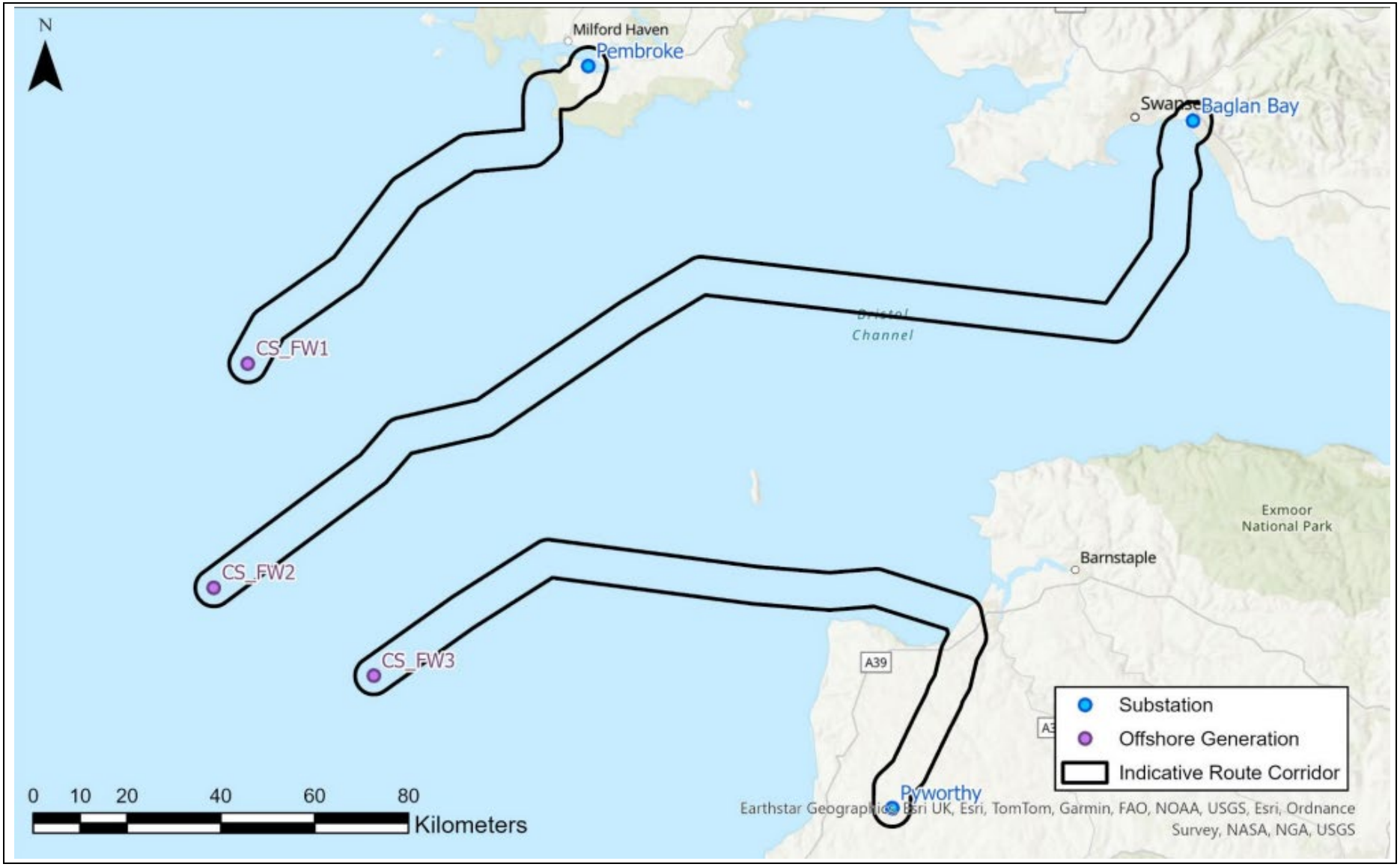
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. Large distances of cabling cannot be avoided within the Bristol Channel Approaches SAC (designated for harbour porpoise) for routes into North Devon and Baglan Bay. There is potential for significant short-term direct and indirect effects on designated features within this site in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to supporting habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes areas of Annex I reef and sandbank for the route to Baglan Bay. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH) There are urban areas within route corridors of the option, however these can be avoided, with the exception of the area of the Baglan Energy Park, and there is potential for short-term impacts such as noise and disturbance within this area. In general, there is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-2	0	0	Direct and Indirect	Yes

Geology, Soils and Land Use (GSL) The Mermaid's Pool to Rowden Gut SSSI (designated for geological features) is unavoidable for the route to North Devon and there are unavoidable areas of Annex I reef within the route to Baglan Bay. There is potential for direct and indirect effects for these sensitive features in the construction and decommissioning phases and during cable maintenance activities (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure. Agricultural lands within the onshore routes are primarily of good, moderate and poor quality, and areas of very high quality are avoidable.	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables / pipelines and military areas. There are urban areas within route corridors of the option, however these can be avoided, with the exception of the area of the Baglan Energy Park (-2). There is also potential for short-term indirect effects on avoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as the route to North Devon shares a landfall in the same location as X-links. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks, Scheduled monuments and listed buildings within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There are urban areas within route corridors of the option, however these can be avoided with the exception of the area of the Baglan Energy Park. There are areas of landscape sensitivity that cannot be avoided along the coastline at North Devon; the North Devon AONB, Hartland Heritage Coast and South West Coast Path cannot be avoided, and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and	-2	-1	-1	Indirect	No

decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.					

Celtic Sea – C_011q			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
345 km	309 km	36 km	No
Routes Included in Design and Capacity			
There are 3 routes included in this design: PDA1 to Pembroke (1,500MW); PDA2 to Baglan Bay (1,500MW); PDA3 to North Devon (Alverdiscott 2) (1,500MW).			
Design Description			
Design C_011q is a radial option and involves the following proposed connections.			


N
Milford Haven
Pembroke
Swansea
Baglan Bay
Bristol Channel
CS_FW1
CS_FW2
CS_FW3
Exmoor National Park
Barnstaple
A39
Substation
Offshore Generation
Indicative Route Corridor
0 10 20 40 60 80
Kilometers
Earthstar Geographics, Esri UK, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, Ordnance Survey, NASA, NGA, USGS

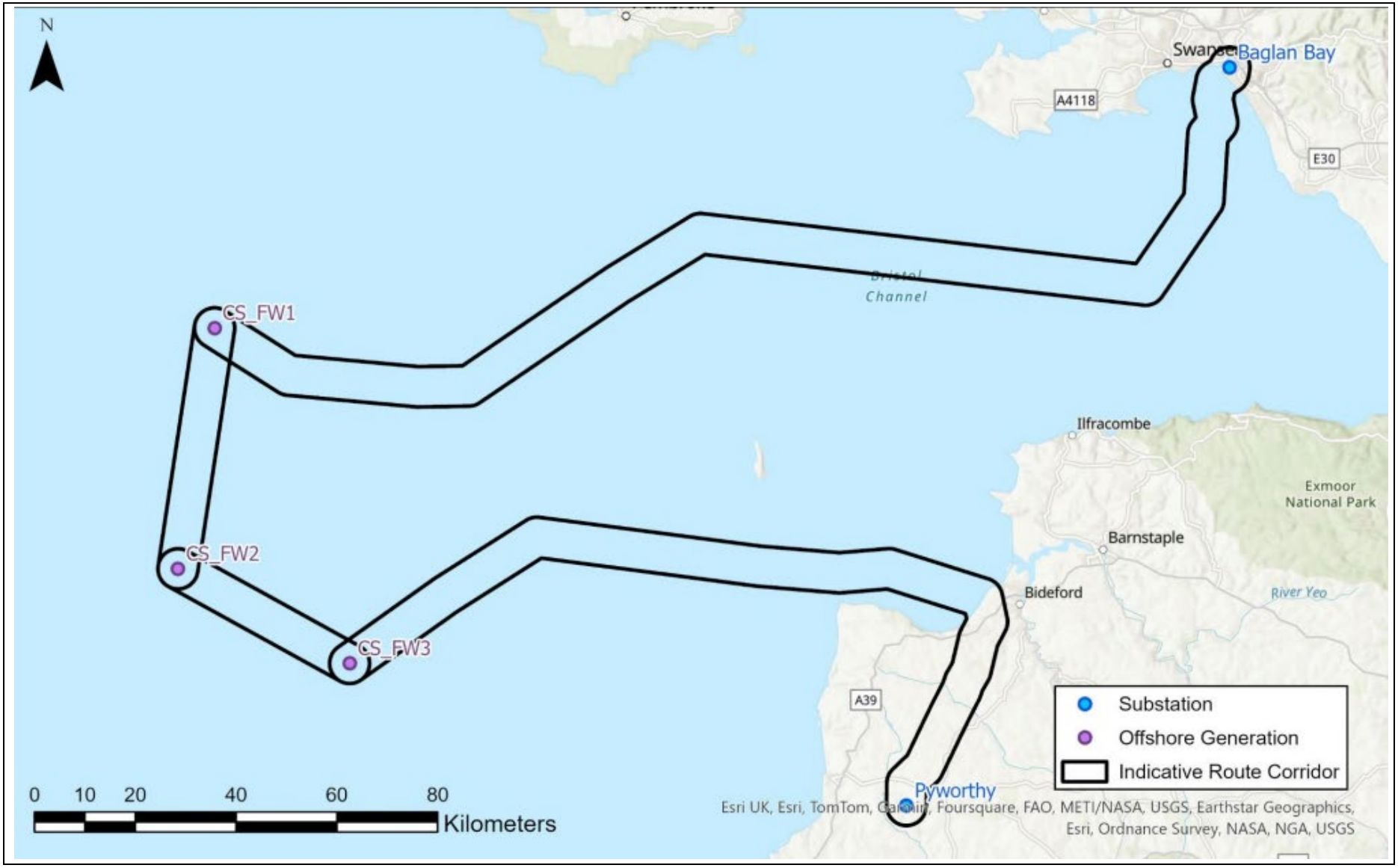
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. Large distances of cabling cannot be avoided within the Bristol Channel Approaches SAC (designated for harbour porpoise) for routes into Baglan Bay and North Devon. The Pembrokeshire Marine SAC (designated for eight marine habitats and ten species), the Limestone Coast of South West Wales/ Arfordir Calchfaen de Orllewin Cymru SAC (designated for sea cliffs and dunes), West Wales Marine SAC (designated for harbour porpoise), Skomer, Skokholm and the Seas off Pembrokeshire SPA (designated for European storm-petrel, Manx shearwater, Atlantic Puffin, and Lesser Black-backed Gull, as well as Red-billed Chough, Short-eared Owl and important breeding seabird assemblage), Arfordir Penrhyn Angle / Angle Peninsula Coast SSSI (designated for intertidal habitats and chough), Broomhill Burrows SSSI (designated for habitats such as dunes and cliffs and chough) and Castlemartin Range SSSI (designated for marine biology, dunes, wetlands, grasslands, and heath) are unavoidable for the route to Pembroke. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes NRW Key Sensitive Habitats for the route to Pembroke, areas of Annex I reef and sandbank for the routes to Pembroke and Baglan Bay, and areas of ancient woodland onshore for the route to Baglan Bay. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes

Population and Human Health (PHH) There are urban areas within route corridors of the option, however these can be avoided, with the exception of the area of the Baglan Energy Park, and there is potential for short-term impacts such as noise and disturbance within this area. In general, there is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-2	0	0	Direct and Indirect	Yes
Geology, Soils and Land Use (GSL) The Mermaid's Pool to Rowden Gut SSSI (designated for geological features) is unavoidable for the route to North Devon and there are unavoidable areas of Annex I reef within the route to Baglan Bay. There is potential for direct and indirect effects for these sensitive features in the construction and decommissioning phases and during cable maintenance activities (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure. Agricultural lands within the onshore routes range from very good to very poor quality; generally the areas of very high quality are avoidable, but it may be difficult to avoid all of these areas in the route into Pembroke.	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and onshore infrastructure. There are urban areas within route corridors of the option, however these can be avoided, with the exception of the area of the Baglan Energy Park (-2). There is also potential for short-term indirect effects on avoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as the route to North Devon shares a landfall in the same location as X-links, and the route to Pembroke is broadly similar to the proposed Llyr wind farm and the Greenlink Interconnector in the vicinity of Freshwater West. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There are wrecks, Scheduled monuments and listed buildings within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable	-1	0	0	Direct & Indirect	Yes

maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).					
Landscape / Seascape and Visual Amenity (L) There are urban areas within route corridors of the option, however these can be avoided with the exception of the area of the Baglan Energy Park. There are areas of landscape sensitivity that cannot be avoided along the coastline at North Devon, including the North Devon AONB, Hartland Heritage Coast and South West Coast Path, as well as along the coastline at Pembroke, including the South Pembrokeshire Heritage Coast, the Pembrokeshire National Trail and the Pembroke Coast National Park, and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.	-2	-1	-1	Indirect	No

Celtic Sea - C_011s			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
322 km	292 km	29km	No
Routes Included in Design and Capacity			
There are 4 routes included in this design. PDA1 to Baglan Bay (2 x1.5GW); PDA2 to PDA1 (1,500MW); PDA2 to PDA3 (1,000MW); PDA3 to North Devon (Alverdiscott 2) (1,500MW).			
Design Description			
Design C_011s is a coordinated option and involves the following proposed connections.			


N
Swansea
Baglan Bay
A4118
E30
Bristol Channel
CS_FW1
CS_FW2
CS_FW3
Ilfracombe
Exmoor National Park
Barnstaple
Bideford
River Yeo
A39
Substation
Offshore Generation
Indicative Route Corridor
0 10 20 40 60 80
Kilometers
Esri UK, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, Earthstar Geographics, Esri, Ordnance Survey, NASA, NGA, USGS

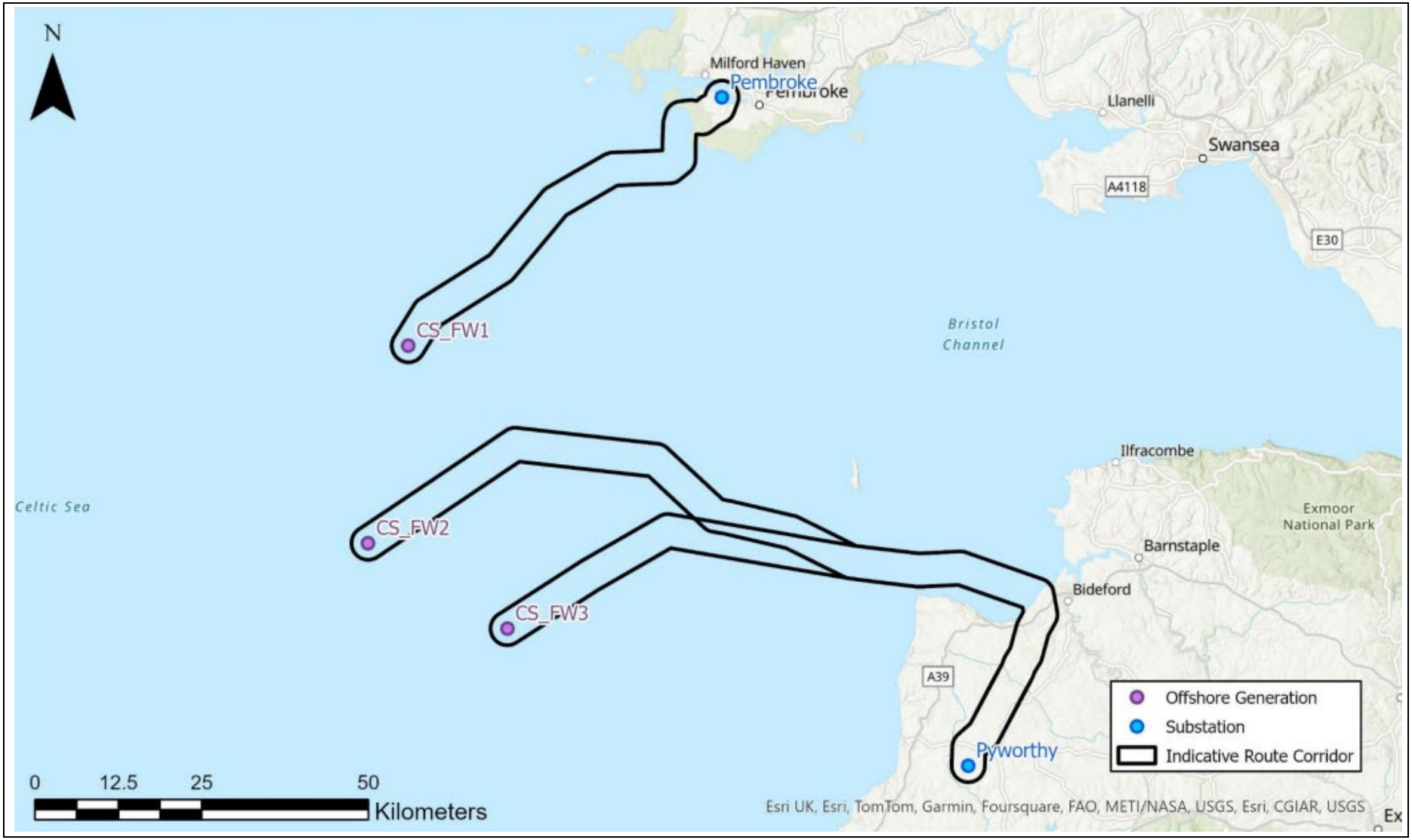
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. Large distances of cabling cannot be avoided within the Bristol Channel Approaches SAC (designated for harbour porpoise) for routes into Baglan Bay and North Devon. There is potential for significant short-term direct and indirect effects on designated features within this site in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to supporting habitat (-3). There are also designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes areas of Annex I reef and sandbank for the route to Baglan Bay. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH) There are urban areas within route corridors of the option, however these can be avoided, with the exception of the area of the Baglan Energy Park, and there is potential for short-term impacts such as noise and disturbance within this area. In general, there is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-2	0	0	Direct and Indirect	Yes

Geology, Soils and Land Use (GSL) The Mermaid's Pool to Rowden Gut SSSI (designated for geological features) is unavoidable for the route to North Devon and there are unavoidable areas of Annex I reef within the route to Baglan Bay. There is potential for direct and indirect effects for these sensitive features in the construction and decommissioning phases and during cable maintenance activities (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure. Agricultural lands within the onshore routes are generally of good to moderate quality for the route to North Devon and very poor quality for the route to Baglan Bay; the small areas of very good quality land are avoidable.	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and onshore infrastructure. There are urban areas within route corridors of the option, however these can be avoided, with the exception of the area of the Baglan Energy Park (-2). There is also potential for short-term indirect effects on avoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as the route to North Devon shares a landfall in the same location as X-links. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks, scheduled monuments and listed buildings within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There are urban areas within route corridors of the option, however these can be avoided with the exception of the area of the Baglan Energy Park. There are areas of landscape sensitivity that cannot be avoided along the coastline at North Devon, including the North Devon AONB, Hartland Heritage Coast and South West Coast Path, and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases	-2	-1	-1	Indirect	No

along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.					

Celtic Sea – C_011u			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
318km	254km	63km	No
Routes Included in Design and Capacity			
There are 3 routes included in this design: PDA1 to Pembroke (1,500MW); PDA2 to North Devon (Alverdiscott 2) (1,500MW); PDA3 to North Devon (Alverdiscott 2) (1,500MW).			
Design Description			
Design C_011u is a radial option and involves the following proposed connections.			


N
Milford Haven
Pembroke
Llanelli
Swansea
A4118
E30
Bristol Channel
CS_FW1
Celtic Sea
CS_FW2
CS_FW3
Ilfracombe
Exmoor National Park
Barnstaple
Bideford
A39
Pyworthy
Offshore Generation
Substation
Indicative Route Corridor
0 12.5 25 50
Kilometers
Esri UK, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, Esri, CGIAR, USGS

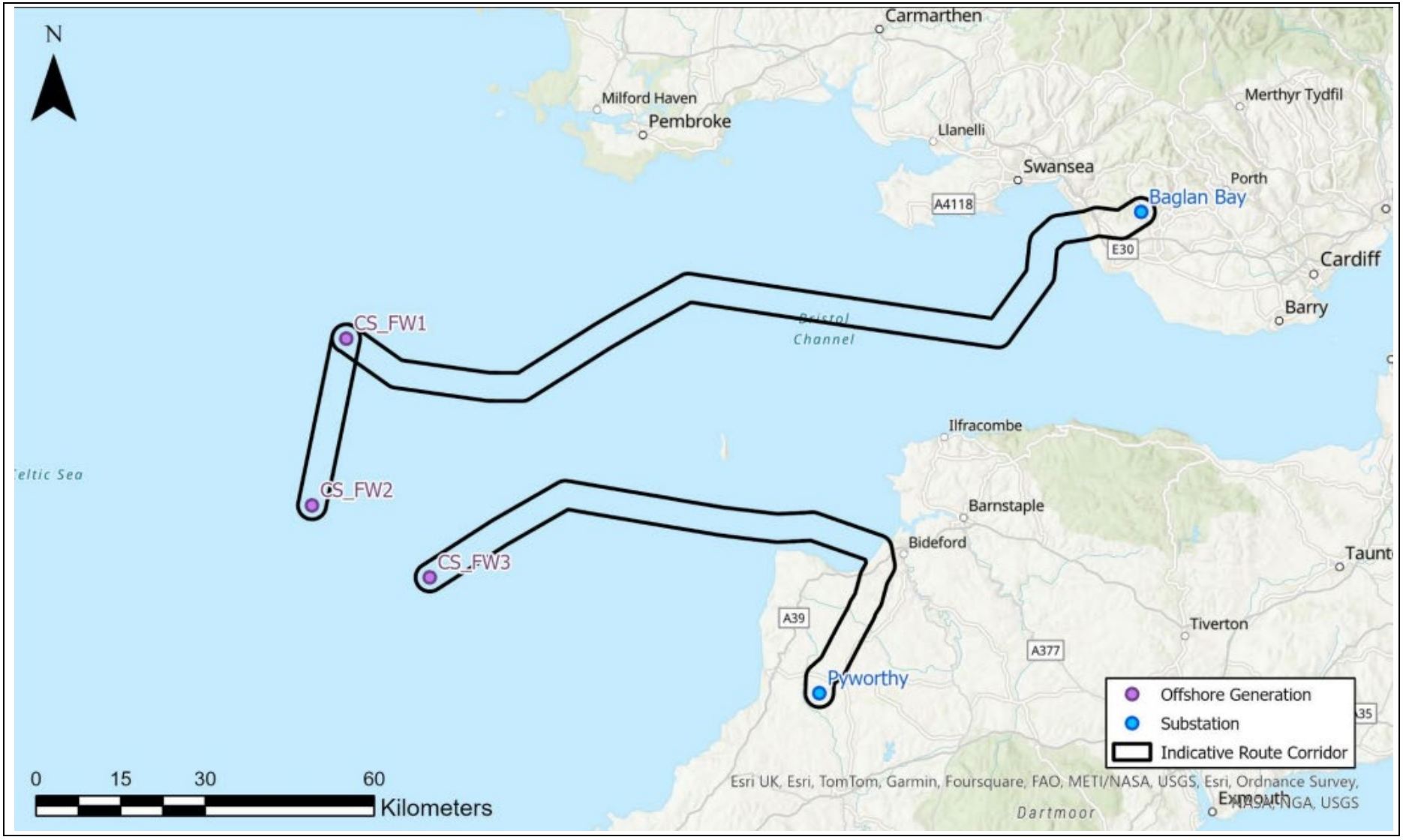
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. Large distances of cabling cannot be avoided within the Bristol Channel Approaches SAC (designated for harbour porpoise) for the routes into North Devon. The Pembrokeshire Marine SAC (designated for eight marine habitats and ten species), the Limestone Coast of South West Wales/ Arfordir Calchfaen de Orllewin Cymru SAC (designated for sea cliffs and dunes), West Wales Marine SAC (designated for harbour porpoise), Skomer, Skokholm and the Seas off Pembrokeshire SPA (designated for European storm-petrel, Manx shearwater, Atlantic Puffin, and Lesser Black-backed Gull, as well as Red-billed Chough, Short-eared Owl and important breeding seabird assemblage), Arfordir Penrhyn Angle / Angle Peninsula Coast SSSI (designated for intertidal habitats and chough), Broomhill Burrows SSSI (designated for habitats such as dunes and cliffs and chough) and Castlemartin Range SSSI (designated for marine biology, dunes, wetlands, grasslands, and heath) are unavoidable for the route to Pembroke. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes NRW Key Sensitive Habitats (including mudflats and sandflats) for the route to Pembroke, and areas of Annex I reef and sandbank for the routes to Pembroke. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes

Population and Human Health (PHH) There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0	0	Direct and Indirect	Yes
Geology, Soils and Land Use (GSL) The Mermaid's Pool to Rowden Gut SSSI (designated for geological features) is unavoidable for the routes to North Devon and there are unavoidable areas of Annex I reef within the route to Pembroke. There is potential for direct and indirect effects for these sensitive features in the construction and decommissioning phases and during cable maintenance activities (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure. Agricultural lands within the onshore routes range from very good to very poor quality; generally, the areas of very high quality are avoidable, but it may be difficult to avoid all of these areas in the route into Pembroke.	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and onshore infrastructure. There are urban areas within route corridors of the option, however these can be avoided (-2). There is also potential for short-term indirect effects on avoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as the routes to North Devon are similar requiring coordination and also share a landfall in the same location as X-links, and the route to Pembroke is broadly similar to the proposed Llyr wind farm and the Greenlink Interconnector in the vicinity of Freshwater West. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There are wrecks, scheduled monuments and listed buildings within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable	-1	0	0	Direct & Indirect	Yes

maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).					
Landscape / Seascape and Visual Amenity (L) There are urban areas within route corridors of the option, however these can be avoided. There are areas of landscape sensitivity that cannot be avoided along the coastline at North Devon, including the North Devon AONB, Hartland Heritage Coast and South West Coast Path, as well as along the coastline at Pembroke, including the South Pembrokeshire Heritage Coast, the Pembrokeshire National Trail and the Pembroke Coast National Park, and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.	-2	-1	-1	Indirect	No

Celtic Sea – C_011v			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
304km	265km	39km	No
Routes Included in Design and Capacity			
There are 3 routes included in this design: CS-FW1 to Baglan Bay (2 x1.5GW); PDA2 to PDA1 (1,500MW); PDA3 to North Devon (Alverdiscott 2) (1,500MW).			
Design Description			
Design C_011v is a semi-coordinated option and involves the following proposed connections.			

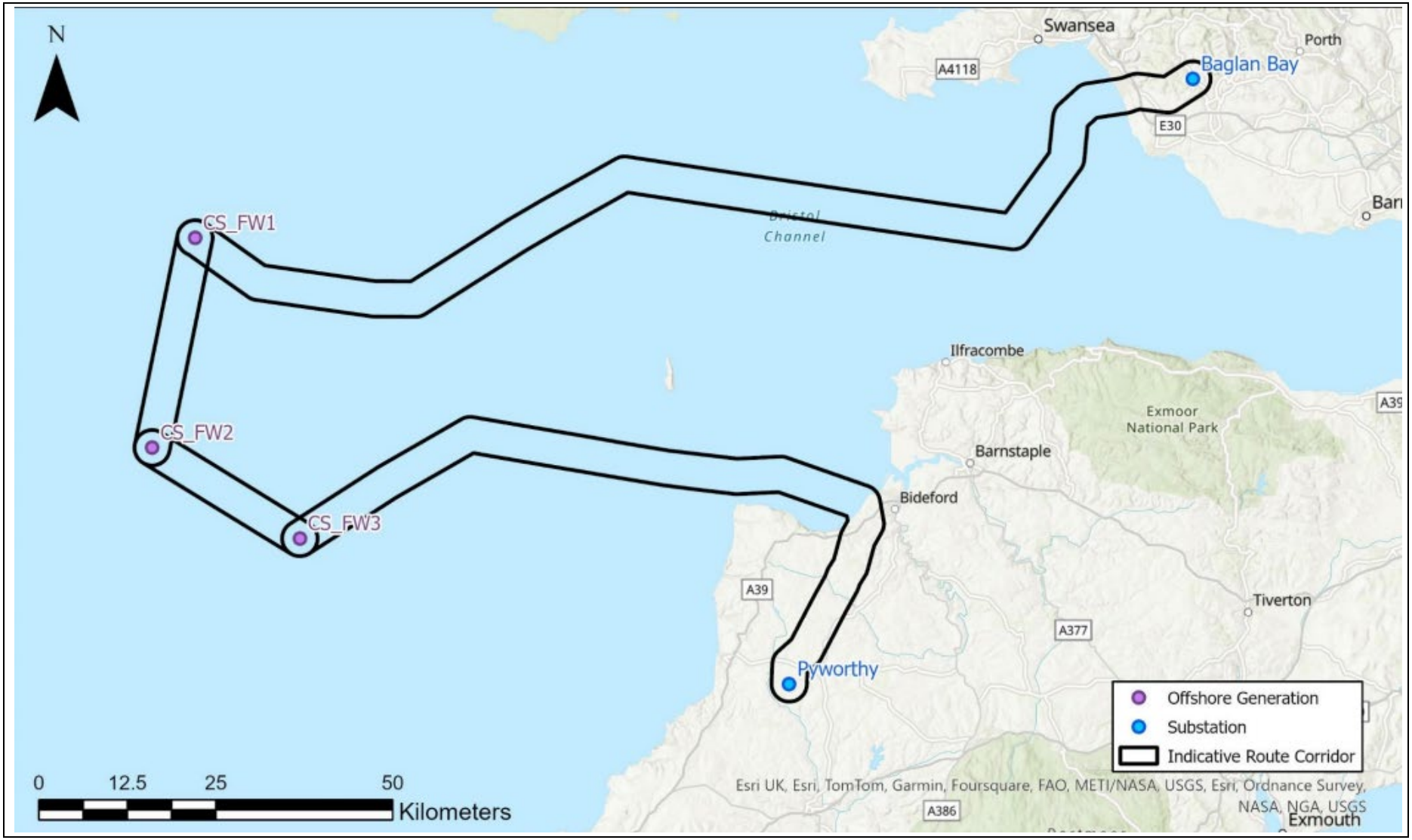

N
Carmarthen
Milford Haven
Pembroke
Llanelli
Merthyr Tydfil
Swansea
Porth
A4118
Baglan Bay
E30
Cardiff
Barry
CS_FW1
Bristol Channel
Ilfracombe
Celtic Sea
CS_FW2
Barnstaple
Bideford
CS_FW3
Taunt
A39
Tiverton
A377
Plymouth
Offshore Generation
Substation
Indicative Route Corridor
0 15 30 60
Kilometers
Esri UK, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, Esri, Ordnance Survey,
Exmouth
Dartmoor

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. Large distances of cabling cannot be avoided within the Bristol Channel Approaches SAC (designated for harbour porpoise) for routes into Baglan Bay and North Devon. There is potential for significant short-term direct and indirect effects on designated features within this site in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to supporting habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes areas of Annex I reef and sandbank and areas of ancient woodland onshore for the route to Baglan Bay. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH) There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0	0	Direct and Indirect	Yes
Geology, Soils and Land Use (GSL) The Mermaid's Pool to Rowden Gut SSSI (designated for geological features) is unavoidable for the route to North Devon and there are unavoidable areas of Annex I reef within the	-2	-2	-2	Direct and Indirect	Yes

route to Baglan Bay. There is potential for direct and indirect effects for these sensitive features in the construction and decommissioning phases and during cable maintenance activities (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure. Agricultural lands within the onshore routes are generally of very good to moderate quality for the route to Baglan Bay and of good to moderate quality for the route to North Devon; the areas of very good quality land are avoidable.					
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and onshore infrastructure (-2). There are urban areas within route corridors of the option, however these can be avoided. There is also potential for short-term indirect effects on avoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as the route to North Devon shares a landfall in the same location as X-links. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks, scheduled monuments and listed buildings within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There are urban areas within route corridors of the option, however these can be avoided. There are areas of landscape sensitivity that cannot be avoided along the coastline at North Devon, including the North Devon AONB, Hartland Heritage Coast and South West Coast Path, and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.	-2	-1	-1	Indirect	No

Celtic Sea – C_011w			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
329km	289km	39km	No
Routes Included in Design and Capacity			
There are 4 routes included in this design: PDA1 to Baglan Bay (2 x1.5GW); PDA2 to PDA1 (1,500MW); PDA2 to PDA3 (1,000MW); PDA3 to North Devon (Alverdiscott 2) (1,500MW).			
Design Description			
Design C_011w is a coordinated option and involves the following proposed connections.			

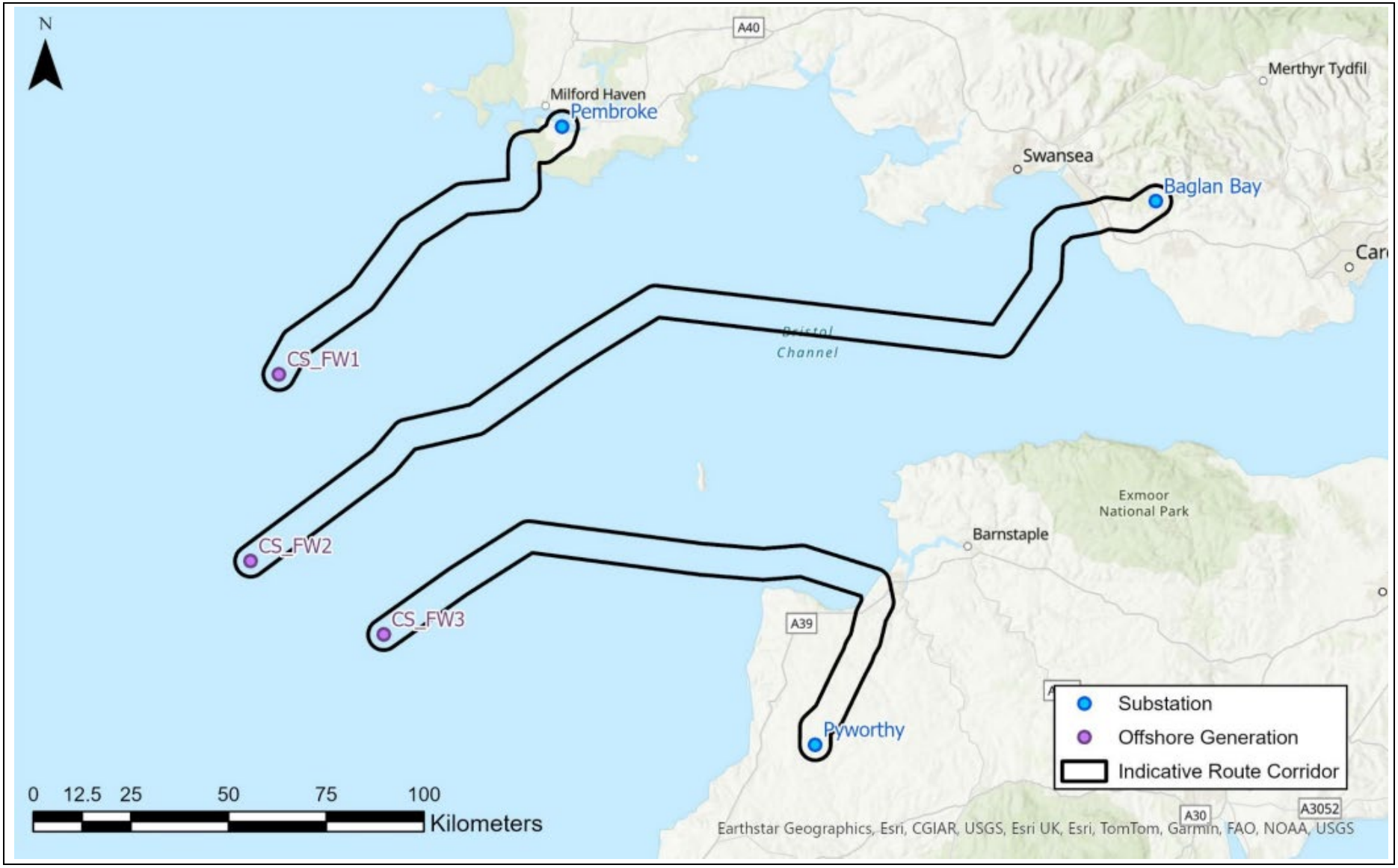

N
Swansea
Porth
A4118
Baglan Bay
E30
Bari
Bristol Channel
CS_FW1
CS_FW2
CS_FW3
Ilfracombe
Exmoor National Park
A39
Barnstaple
Bideford
A39
Tiverton
A377
Pyworthy
A386
Exmouth
Offshore Generation
Substation
Indicative Route Corridor
0
12.5
25
50
Kilometers
Esri UK, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, Esri, Ordnance Survey, NASA, NGA, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. Large distances of cabling cannot be avoided within the Bristol Channel Approaches SAC (designated for harbour porpoise) for routes into Baglan Bay and North Devon. There is potential for significant short-term direct and indirect effects on designated features within this site in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to supporting habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes areas of Annex I reef and sandbank and areas of ancient woodland onshore for the route to Baglan Bay. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH) There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0	0	Direct and Indirect	Yes
Geology, Soils and Land Use (GSL) The Mermaid's Pool to Rowden Gut SSSI (designated for geological features) is unavoidable for the route to North Devon and there are unavoidable areas of Annex I reef within the	-2	-2	-2	Direct and Indirect	Yes

route to Baglan Bay. There is potential for direct and indirect effects for these sensitive features in the construction and decommissioning phases and during cable maintenance activities (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure. Agricultural lands within the onshore routes are generally of very good to moderate quality for the route to Baglan Bay and of good to moderate quality for the route to North Devon; the areas of very good quality land are avoidable.					
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and onshore infrastructure (-2). There are urban areas within route corridors of the option, however these can be avoided. There is also potential for short-term indirect effects on avoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as the route to North Devon shares a landfall in the same location as X-links. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks, scheduled monuments and listed buildings within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There are urban areas within route corridors of the option, however these can be avoided. There are areas of landscape sensitivity that cannot be avoided along the coastline at North Devon, including the North Devon AONB, Hartland Heritage Coast and South West Coast Path, and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.	-2	-1	-1	Indirect	No

Celtic Sea – C_011x2			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
350km	304km	46km	No
Routes Included in Design and Capacity			
There are 3 routes included in this design: PDA1 to Pembroke (1,500MW); PDA2 to Baglan Bay (1,500MW); PDA3 to North Devon (Alverdiscott 2) (1,500MW).			
Design Description			
Design C_011x2 is a radial option and involves the following proposed connections.			


N
A40
Merthyr Tydfil
Milford Haven
Pembroke
Swansea
Baglan Bay
Bristol Channel
CS_FW1
CS_FW2
CS_FW3
Exmoor National Park
Barnstaple
A39
Substation
Offshore Generation
Indicative Route Corridor
Pyworthy
A30
A3052
0 12.5 25 50 75 100
Kilometers
Earthstar Geographics, Esri, CGIAR, USGS, Esri UK, Esri, TomTom, Garmin, FAO, NOAA, USGS

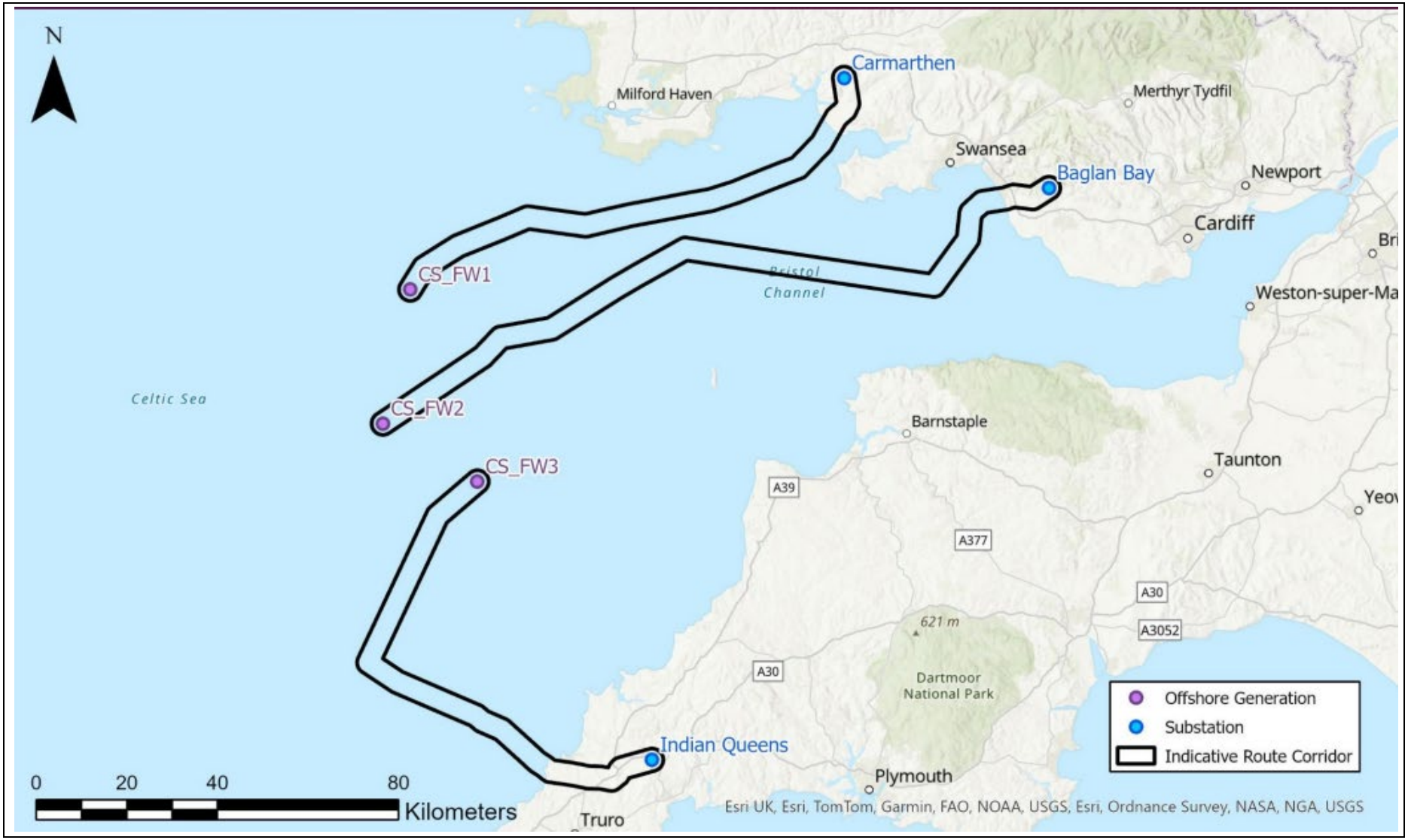
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. Large distances of cabling cannot be avoided within the Bristol Channel Approaches SAC (designated for harbour porpoise) for routes into Baglan Bay, Pembroke and North Devon. The Pembrokeshire Marine SAC (designated for eight marine habitats and ten species), Stackpole Quay - Trewent Point SSSI. Freshwater East Cliffs to Skrinkle Haven SSSI are unavoidable for the route to Pembroke. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes NRW Key Sensitive Habitats (including mudflats and sandflats, and reef) for the route to Pembroke, areas of Annex I reef and sandbank for the routes to Pembroke and Baglan Bay, and areas of ancient woodland onshore for the route to Baglan Bay. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH) There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0	0	Direct and Indirect	Yes

Geology, Soils and Land Use (GSL) The Mermaid's Pool to Rowden Gut SSSI (designated for geological features) is unavoidable for the route to North Devon and there are unavoidable areas of Annex I reef within the routes to Pembroke and Baglan Bay. There is potential for direct and indirect effects for these sensitive features in the construction and decommissioning phases and during cable maintenance activities (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure. Agricultural lands within the onshore routes range from very good to very poor quality; generally, the areas of very high quality are avoidable, but it may be difficult to avoid all of these areas in the route into Pembroke.	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and onshore infrastructure (-2). There are urban areas within route corridors of the option, however these can be avoided. There is also potential for short-term indirect effects on avoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as the route to North Devon shares a landfall in the same location as X-links, and the route to Pembroke crosses the proposed Llyr offshore wind farm cable route. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There are wrecks, scheduled monuments and listed buildings within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There are urban areas within route corridors of the option, however these can be avoided. There are areas of landscape sensitivity that cannot be avoided along the coastline at North Devon, including the North Devon AONB, Hartland Heritage Coast and South West Coast Path, as well as along the coastline at Pembroke, including the South Pembrokeshire Heritage Coast, the Pembrokeshire National Trail and the Pembroke Coast National Park,	-2	-1	-1	Indirect	No

and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.					

Celtic Sea – C_011y			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
407km	358km	49km	No
Routes Included in Design and Capacity			
There are 3 routes included in this design: PDA1 to Carmarthen (1,500MW); PDA2 to Baglan Bay (1,500MW); PDA3 to Indian Queens (1,500MW).			
Design Description			
Design C_011y is a radial option and involves the following proposed connections.			

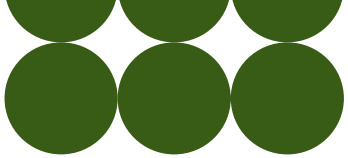

N
Carmarthen
Milford Haven
Merthyr Tydfil
Swansea
Baglan Bay
Newport
Cardiff
Bri
Bristol Channel
Weston-super-Ma
CS_FW1
CS_FW2
CS_FW3
Celtic Sea
Barnstaple
Taunton
Yeov
A39
A377
A30
A3052
621 m
Dartmoor National Park
Indian Queens
Plymouth
Truro
Offshore Generation
Substation
Indicative Route Corridor
0 20 40 80
Kilometers
Esri UK, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, Ordnance Survey, NASA, NGA, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. Large distances of cabling cannot be avoided within the Bristol Channel Approaches SAC (designated for harbour porpoise) for routes into Carmarthen, Baglan Bay and Indian Queens. The Carmarthen Bay and Estuaries SAC (designated for estuaries, subtidal sandbanks, mudflats and sandflats, shallow inlets and bays, Salicornia habitat, Atlantic salt meadows, Twaite and allis shad, river and sea lamprey and otter), Carmarthen Bay SPA (designated for common scoter), and Pembrey Coast SSSI (designated for intertidal, saltmarsh and sand dune habitats) are unavoidable for the route to Carmarthen, and the Kelsey Head SSSI, Penhale Dunes SSSI and Cornwall Moors SSSI are unavoidable for the route to Indian Queens. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, including the Newquay and the Gannet MCZ (designated for a variety of habitats and species, including exposed sandy beaches and rocky shores, sediment, sand and mud communities, saltmarsh and giant goby, and identified as a site sensitive to pressures associated with cabling activities) for the route to Indian Queens, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes NRW Key Sensitive Habitats for the route to Carmarthen, areas of Annex I reef for the route to Indian Queens, and areas of Annex I reef and sandbank, and onshore areas of ancient woodland for the route to Baglan Bay. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2).	-3	-2	-2	Direct and Indirect	Yes

In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).					
Population and Human Health (PHH) There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	0	0	Direct and Indirect	Yes
Geology, Soils and Land Use (GSL) There are unavoidable areas of Annex I reef within the routes to Baglan Bay and Indian Queens. There is potential for direct and indirect effects for these sensitive features in the construction and decommissioning phases and during cable maintenance activities (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure. Agricultural lands within the onshore routes are generally of good and moderate quality, and the areas of very high-quality agricultural land are avoidable.	-2	-1	-1	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

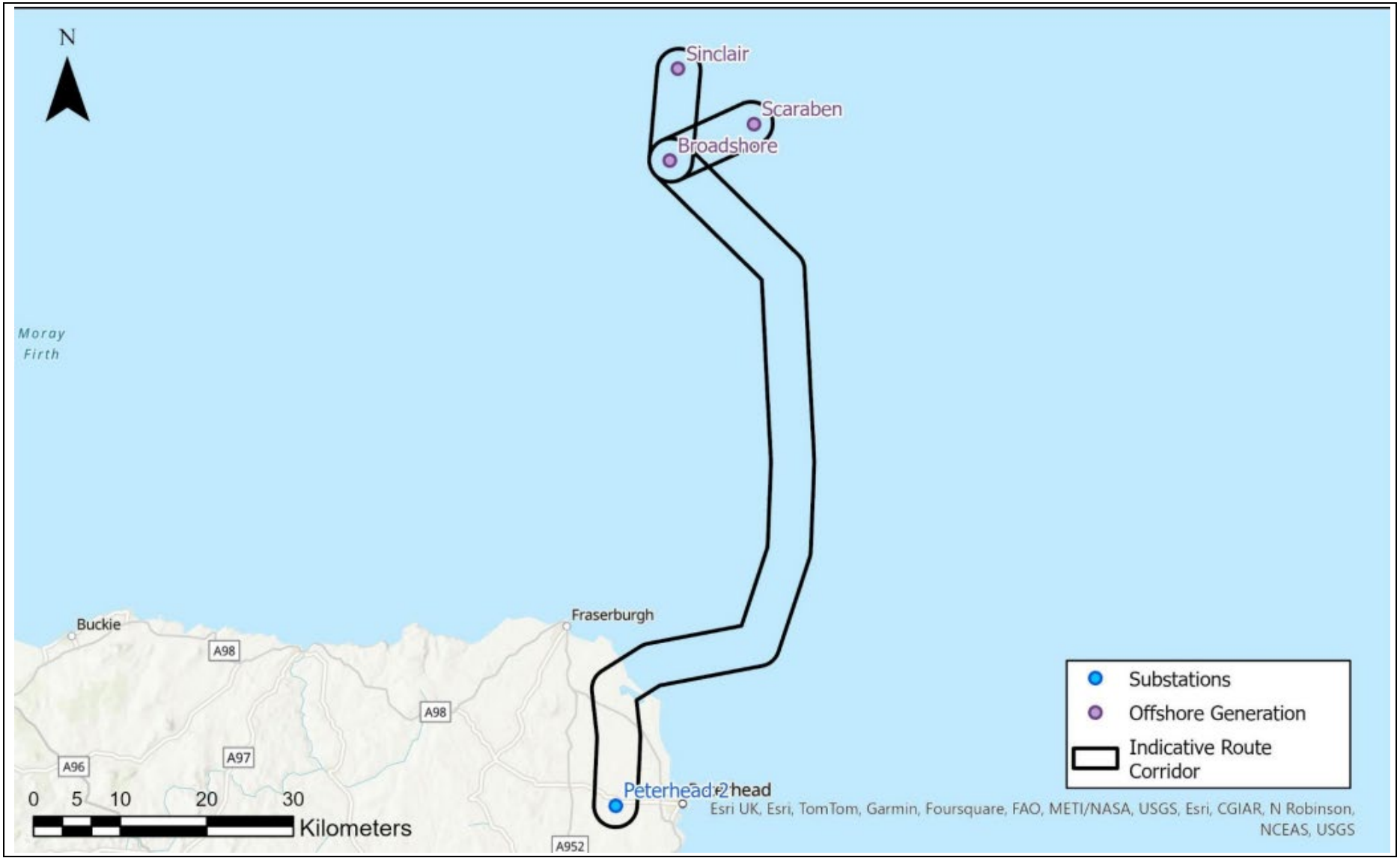
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables, military areas and onshore infrastructure (-2). There are urban areas within route corridors of the option, however these can be avoided. There is also potential for short-term indirect effects on avoidable material assets and infrastructure during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as the offshore route to Carmarthen crosses the Llyr wind farm cables. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks, scheduled monuments and listed buildings within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L)	-1	-1	-1	Indirect	No

There are urban areas within route corridors of the option, however these can be avoided. The South West Coastal Path is an area of landscape sensitivity that cannot be avoided within the route to Indian Queens, and there is potential for short-term impacts within this area. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.					



F.3.4 HNDFUE INTOG Options

INTOG – IN_004			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
109km	93km	16km	No
Routes Included in Design and Capacity			
There are 3 routes included in this design: Scaraben to Broadshore (100MW); Sinclair to Broadshore (100MW); Broadshore to Peterhead2/DCSS 132kV (1200MW).			
Design Description			
Design IN_004 is a coordinated option and involves the proposed connections of Scaraben to Broadshore, Sinclair to Broadshore and Broadshore to Peterhead2/DCSS.			

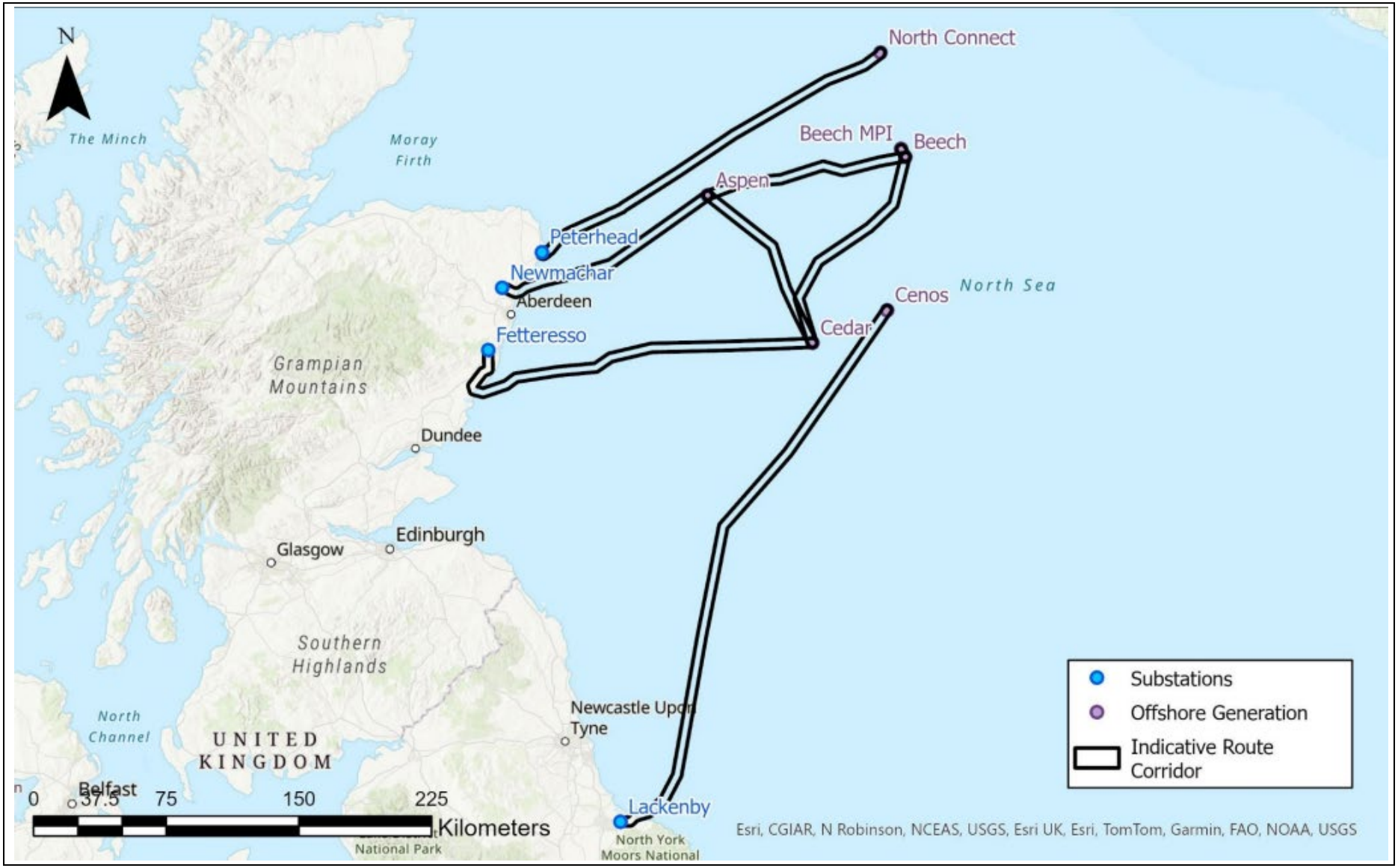

N
Sinclair
Scaraben
Broadshore
Moray
Firth
Buckie
A98
A98
A97
A96
Fraserburgh
Peterhead
A952
0 5 10 20 30
Kilometers
Substations
Offshore Generation
Indicative Route Corridor
Esri UK, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, Esri, CGIAR, N Robinson, NCEAS, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are designated sites that cannot be avoided by cable routes within the option. The Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale) cannot be avoided for the route to Peterhead2/DCSS; however, the trench itself and known locations of protected habitat are avoidable. The Loch of Strathbeg SSI (designated for lake and fen habitat and breeding birds) is also unavoidable. There is potential for short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-2). There are also designated sites and sensitive areas that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, such as indirect damage to habitats sedentary species and disturbance and displacement of mobile species. In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-2	0	0	Direct & Indirect	No
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There is an urban area within route corridors of the option, however there is potential to avoid this area. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Geology, Soils and Land Use (GSL) There is unlikely to be potential for significant negative effects on GSL, as there are no unavoidable sensitivities of significance. There is potential for indirect effects on areas of sensitive Annex I reef that are within the route corridors and cannot be avoided (-1).	-1	0	0	Direct & Indirect	Yes

There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.					
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including a gas pipeline from the St Fergus Gas Terminal for the route to Peterhead2/DCSS, and potential for short-term indirect effects on avoidable material assets and infrastructure, such as offshore oil and gas wells and onshore infrastructure,	-2	0/+1	0/+1	Direct & Indirect	No

during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).					
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks and Scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations in the vicinity of Peterhead2/DCSS.	-2	-2	-2	Indirect	No

INTOG – R003K-1A			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
1279km	1230km	49km	No
Routes Included in Design and Capacity			
There are 9 routes included in this design: Aspen to Newmachar 400kV (2000MW); Cedar to Fetteresso 400kV (2*800MW); Aspen to Beech (2*500MW); Beech to Beech MPI (4*500MW); Beech to Cedar (2*500MW); Cedar to Aspen (2*500MW); Cenos to Lackenby 2 400kV (1500MW); North Connect to Peterhead1 (1400MW); Beech to Bremen (2000MW).			
Design Description			
Design R003K-1A includes co-ordination between Aspen, Beech and Cedar and utilises Cenos' current offer of a connection to Lackenby in England. Also included are HVDC connections from Aspen to Newmachar and Cedar to Fetteresso. Overall, this option involves the following proposed connections.			


N
North Connect
Beech MPI
Beech
Aspen
Peterhead
Newmachar
Aberdeen
Fetteresso
Cenos
Cedar
North Sea
The Minch
Moray Firth
Grampian Mountains
Dundee
Edinburgh
Glasgow
Southern Highlands
North Channel
UNITED KINGDOM
Belfast
Newcastle Upon Tyne
Lackenby
North York Moors National
National Park
0
37.5
75
150
225
Kilometers
Substations
Offshore Generation
Indicative Route Corridor
Esri, CGIAR, N Robinson, NCEAS, USGS, Esri UK, Esri, TomTom, Garmin, FAO, NOAA, USGS

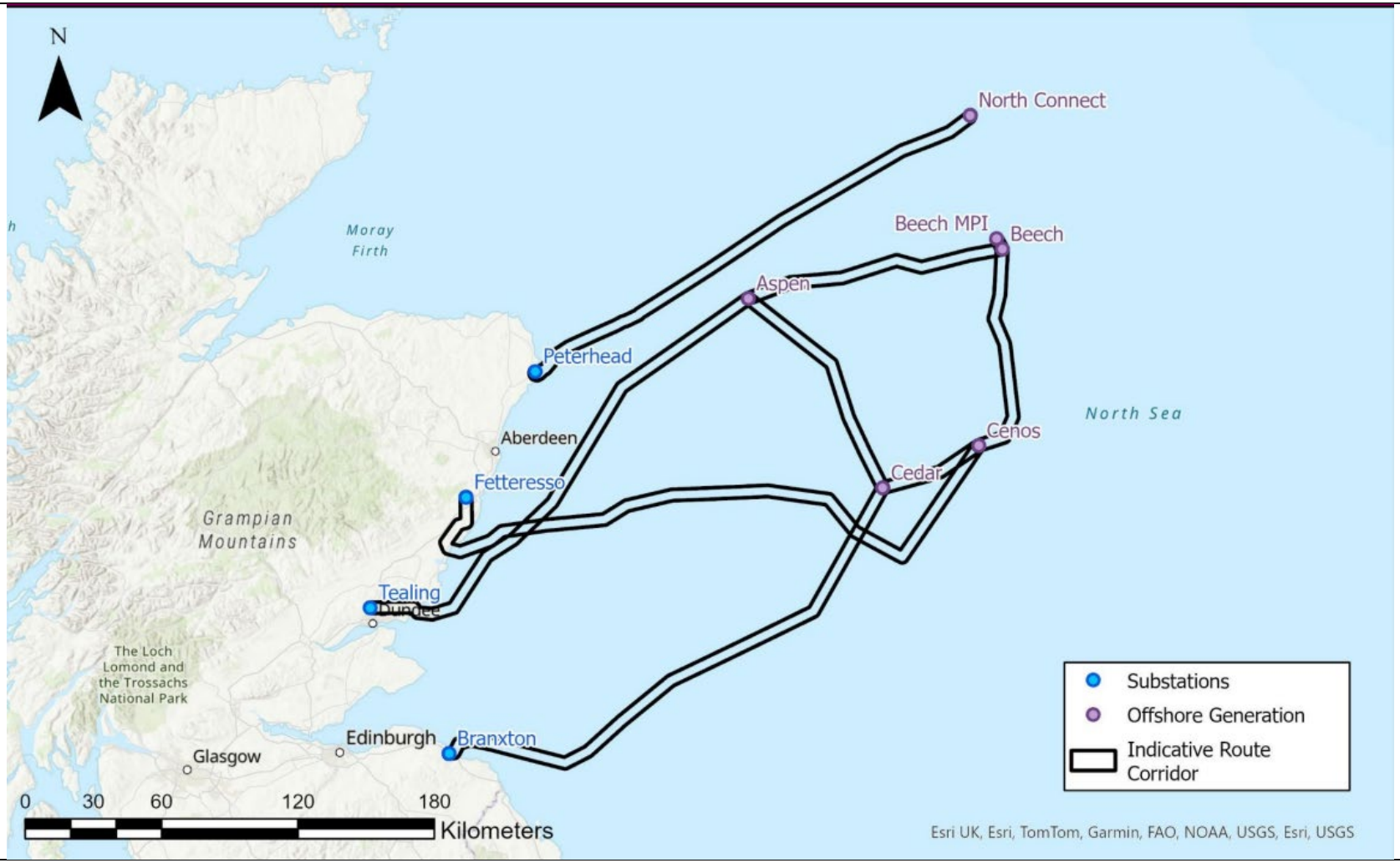
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. The St Cyrus and Kinnaber Links SSSI (designated for birds, grassland, moths and saltmarsh) is unavoidable for the route to Fetteresso, the Ythan Estuary, Sands of Forvie and Meikle Loch SPA (designated for breeding tern species and non-breeding redshank, pink-footed goose and waterfowl) for the route to Newmachar, and the Buchan Ness to Collieston Coast SAC (designated for vegetated cliff habitat), SPA (designated for seabirds, including black-legged kittiwake, common guillemot, herring gull, European shag and northern fulmar), and Bullers of Buchan Coast SSSI for the route to Peterhead1. The East of Gannet and Montrose Fields MPA is also not possible to avoid as the Cenos generation site is located within the MPA. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes areas of Annex I reef for the routes to Peterhead1 and Lackenby. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH) There are urban areas within route corridors of the option, while most are avoidable, those within the route to Lackenby (Redcar, Saltburn-by-the-sea) may be difficult to avoid due to the presence of cliffs at landfall, and there is potential for significant short-term indirect	-3	-1/+1	-1/+1	Indirect / Indirect	Yes

impacts on the local population (-3). In general, there is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).					
Geology, Soils and Land Use (GSL) The Milton Ness SSSI (designated for geological features) is unavoidable for the route to Fetteresso, and there are areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. There is potential for direct and indirect effects within these sensitive areas. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure.	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and pipelines for several routes, including the cables for the Buchan Deep Demo wind farm, areas of high shipping intensity that cannot be avoided for the routes from North Connect to Peterhead1 and from Aspen to Newmachar, and the Druridge Military Area within the route to Lackenby (-2). There are urban areas within route corridors of the option, while most are avoidable, those within the route to Lackenby (Redcar, Saltburn-by-the-sea) may be difficult to avoid due to the presence of cliffs at landfall, and there is potential for impacts within this area (-3). There is also potential for short-term indirect effects on avoidable material assets and infrastructure, such as cables and pipelines and onshore infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as several routes within the option partially share a route corridor, and several would need to cross routes within HND1 and HNDFUE ScotWind. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-3	0/+2	0/+2	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There are wrecks and scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities,	-1	0	0	Direct & Indirect	Yes

and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).					
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, which can generally be avoided; however, it may be difficult to avoid those at landfall at Lackenby. There are also National Trails and Heritage Coasts that are unavoidable within route corridors (the Formartine and Buchan Way National Trail for routes to Newmachar, and the North Yorkshire and Cleveland Heritage Coast and Cleveland Way National Trail for the route to Lackenby), and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.	-2	-2	-2	Indirect	No

INTOG – TOG_M007X			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
1373km	1320km	53km	No
Routes Included in Design and Capacity			
There are 10 routes included in this design: Cenos to Fetteresso 400kV (1400MW); Aspen to Tealing 400kV (1500MW); Aspen to Beech (2*500MW); Beech to Beech MPI (4*500MW); Beech to Cenos (2*500MW); Cedar to Cenos (2*500MW); Cedar to Aspen (2*500MW); Cedar to Nr Branxton (2000MW); North Connect to Peterhead1 (1400MW); Beech MPI to Bremen (2000MW).			
Design Description			
Design TOG_M007X is balanced between radial and coordinated options and includes all four in scope TOG projects. This design includes connections between the TOG sites at Aspen, Beech, Cedar and Cenos, and HVDC links to shore. The option involves the following proposed connections.			


N
North Connect
Beech MPI
Beech
Aspen
Peterhead
Moray Firth
North Sea
Aberdeen
Genos
Cedar
Fetteresso
Grampian Mountains
Tealing
Dundee
The Loch Lomond and the Trossachs National Park
Edinburgh
Branxton
Glasgow
0 30 60 120 180
Kilometers
Substations
Offshore Generation
Indicative Route Corridor
Esri UK, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

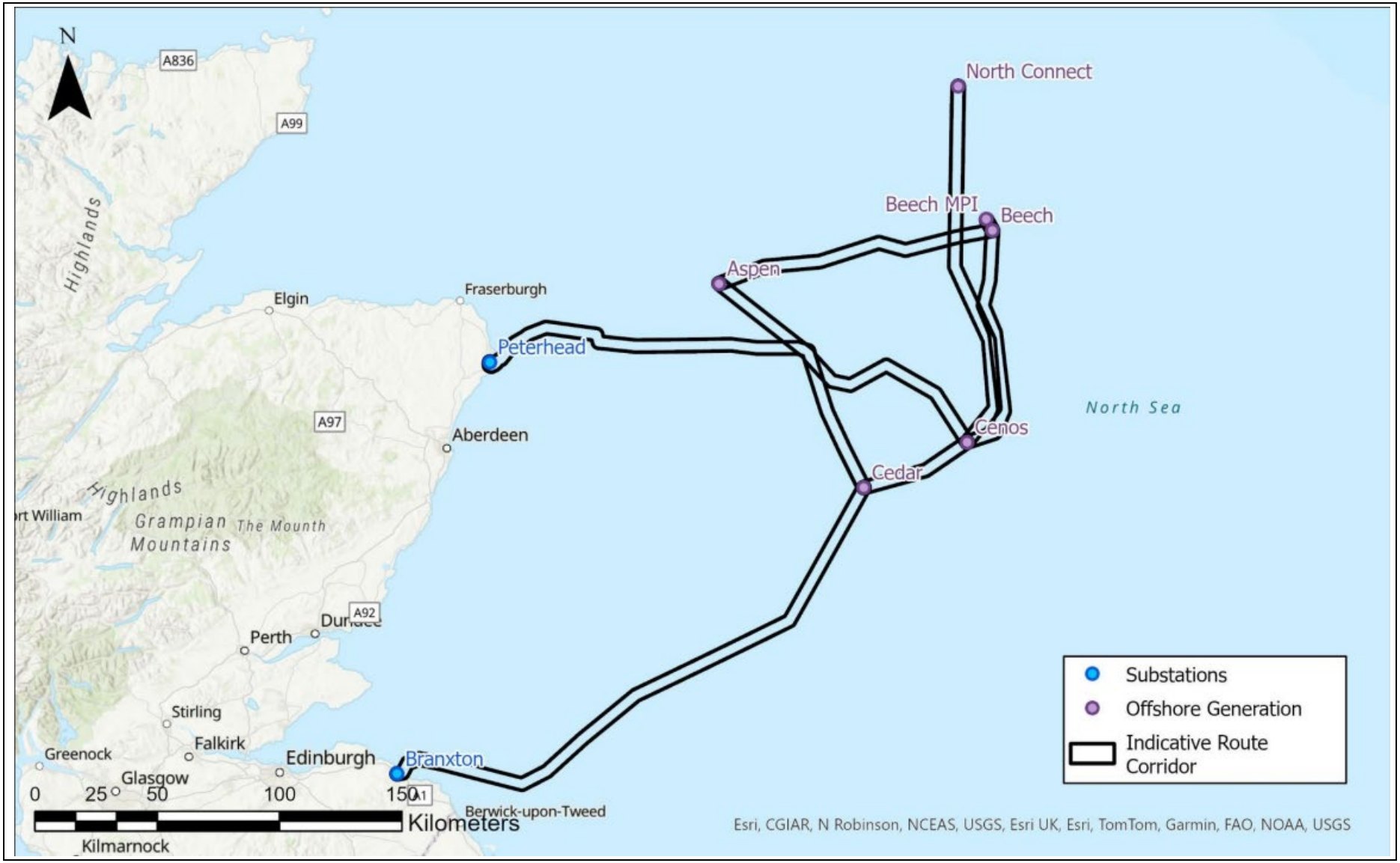
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. The St Cyrus and Kinnaber Links SSSI (designated for birds, grassland, moths and saltmarsh) is unavoidable for the route to Fetteresso, the Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) for the routes to Tealing and Branxton, the Buchan Ness to Collieston Coast SAC (designated for vegetated cliff habitat), SPA (designated for seabirds, including black-legged kittiwake, common guillemot, herring gull, European shag and northern fulmar), and Bullers of Buchan Coast SSSI for the route to Peterhead1. The East of Gannet and Montrose Fields MPA is also not possible to avoid as the Cenos generation site is located within the MPA. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes areas of Annex I reef for the routes to Tealing, Branxton and Peterhead1. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

option, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).					
Geology, Soils and Land Use (GSL) The Milton Ness SSSI (designated for geological features) is unavoidable for the route to Fetteresso, and there are areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. There is potential for direct and indirect effects within these sensitive areas. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure and areas of primarily very good and good quality agricultural land that are within the route corridors and cannot be avoided (-2).	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF)	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and pipelines for several routes, and including the Seagreen Wind Farm cable for the routes to Tealing and the Buchan Deep Demo Wind Farm cable for the routes to Peterhead1, for areas of high intensity shipping within the route from North Connect to Peterhead1, and for onshore infrastructure (-2). There is also potential for short-term indirect effects on avoidable material assets and infrastructure, such as cables and pipelines and onshore infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as several routes within the option cross offshore, and several would need to cross, or share a similar route corridor to, routes within HND1 and HNDFUE ScotWind. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH**,** as there are no unavoidable sensitivities of significance. There are wrecks and scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes

Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.	-1	-1	-1	Indirect	No

INTOG – TOG_M010Y-NC			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
1237km	1231km	6km	No
Routes Included in Design and Capacity			
There are 9 routes included in this design: Cenos to Peterhead1 400kV (1400MW); Cedar to Nr Branxton (2x1500MW); Aspen to Beech (2*500MW); Beech to Beech MPI (4*500MW); Beech to Cenos (2*500MW); Cedar to Cenos (2*500MW); Cedar to Aspen (2*500MW); North Connect to Cenos (1400MW); Beech MPI to Bremen (2000MW).			
Design Description			
Design TOG_M010Y-NC incorporates all four in scope TOG sites and North Connect. This design includes connections between TOG sites Aspen, Beech, Cedar and Cenos and utilises the planned North Connect route to Peterhead1 for the Cenos connection. The option involves the following proposed connections.			

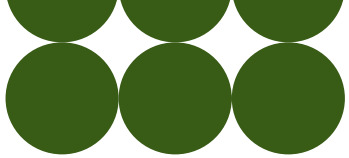

N
A836
A99
A97
A92
A1
Highlands
Elgin
Fraserburgh
Peterhead
Aberdeen
Highlands
Grampian Mountains
The Mounth
Perth
Stirling
Falkirk
Greenock
Glasgow
Edinburgh
Branxton
Berwick-upon-Tweed
Kilmarnock
0 25 50 100 150
Kilometers
North Connect
Beech MPI
Beech
Aspen
Cenos
Cedar
North Sea
Substations
Offshore Generation
Indicative Route Corridor
Esri, CGIAR, N Robinson, NCEAS, USGS, Esri UK, Esri, TomTom, Garmin, FAO, NOAA, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. The Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) is unavoidable for the route to Branxton, and the Buchan Ness to Collieston Coast SAC (designated for vegetated cliff habitat), SPA (designated for seabirds, including black-legged kittiwake, common guillemot, herring gull, European shag and northern fulmar), Bullers of Buchan Coast SSSI, East of Gannet and Montrose Fields MPA, and Southern Trench MPA (designated features include burrowed mud communities, fronts, shelf deeps and minke whale for the route to Peterhead1. The East of Gannet and Montrose Fields MPA is also not possible to avoid as the Cenos generation site is located within the MPA. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes areas of Annex I reef for the routes to Branxton and Peterhead1. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH)	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

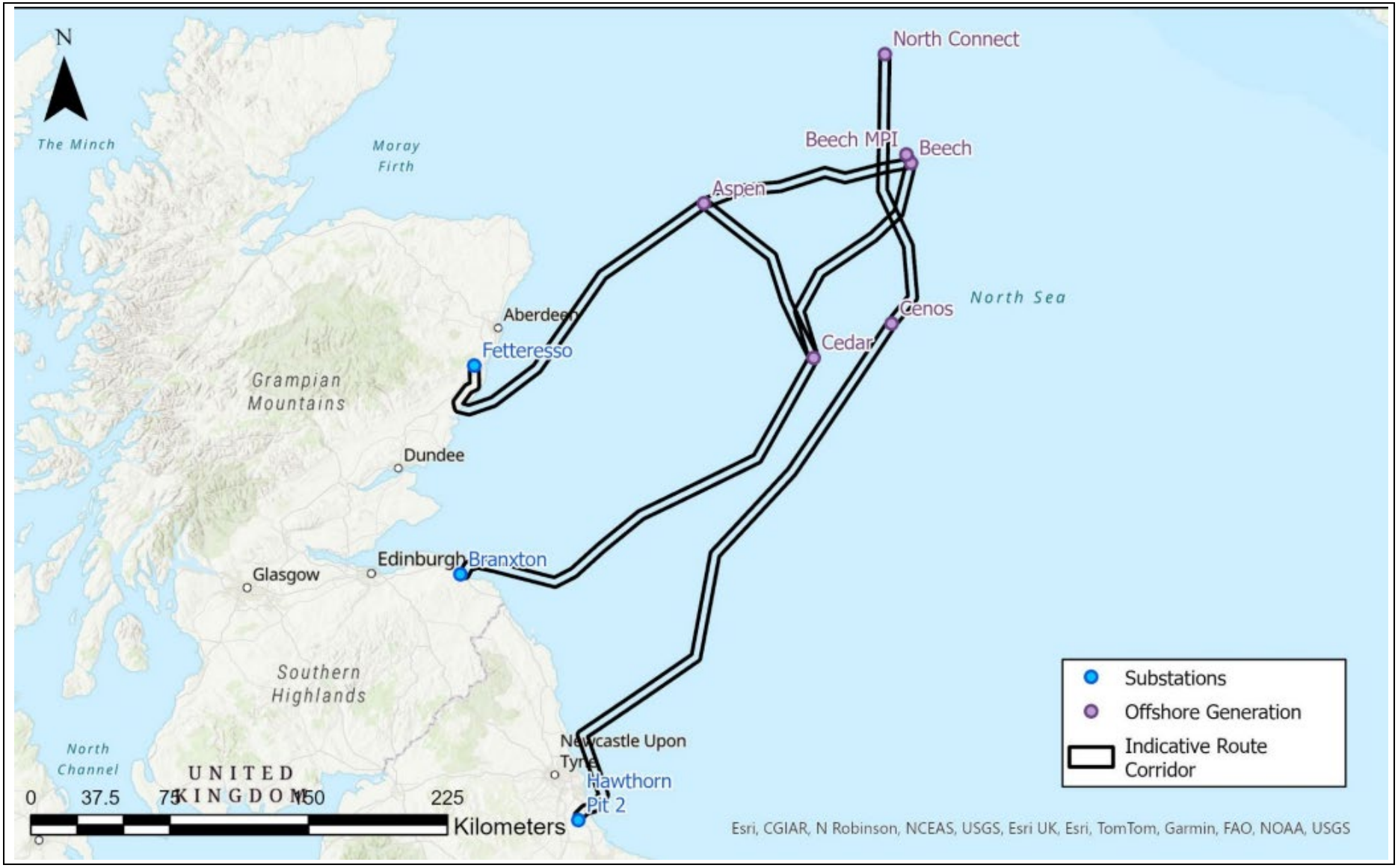
There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).					
Geology, Soils and Land Use (GSL) The Bullers of Buchan Coast SSSI (designated in part for coastal geomorphology and maritime cliff) and Southern Trench MPA are unavoidable for the route to Peterhead1, and there are areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. There is potential for direct and indirect effects within these sensitive areas. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure and areas of primarily very good and good quality agricultural land that are within the route corridors and good quality land cannot be avoided (-2).	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and pipelines for several routes, and including the Buchan Deep Demo Wind Farm cable for the route to Peterhead1, for areas of high intensity shipping within the route from Cenos to Peterhead1, and for onshore infrastructure (-2). There is also potential for short-term indirect effects on avoidable material assets and infrastructure, such as cables and pipelines and onshore infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as several routes within the option cross offshore, and several would need to cross, or share a similar route corridor to, routes within HND1 and HNDFUE ScotWind. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks and scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities,	-1	0	0	Direct & Indirect	Yes

and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).					
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.	-1	-1	-1	Indirect	No



INTOG – TOG_R007V-NC			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
1304km	1264km	40km	No
Routes Included in Design and Capacity			
There are 9 routes included in this design: Aspen to Fetteresso 400kV (1500MW); Cedar to Nr Branxton (2000MW); Aspen to Beech (2*500MW); Beech to Beech MPI (4*500MW); Beech to Cedar (2*500MW); Cedar to Aspen (2*500MW); Cenos to Hawthorn Pit 2 400kV (1400MW); North Connect to Cenos (1400MW); Beech MPI to Bremen (2000MW).			
Design Description			
Design TOG_R007V-NC coordinates CENOS with North Connect and moves the onshore connection to Hawthorn Pit. Beech, Aspen and Cedar are coordinated offshore and connected to the grid at Fetteresso and Nr Branxton. This option involves the following proposed connections.			


N
The Minch
Moray Firth
North Connect
Beech MPI
Beech
Aspen
Aberdeen
Fetteresso
Grampian Mountains
Dundee
Cenos
North Sea
Cedar
Edinburgh
Branxton
Glasgow
Southern Highlands
North Channel
UNITED KINGDOM
Newcastle Upon Tyne
Hawthorn Pit 2
0 37.5 75 150 225
Kilometers
Substations
Offshore Generation
Indicative Route Corridor
Esri, CGIAR, N Robinson, NCEAS, USGS, Esri UK, Esri, TomTom, Garmin, FAO, NOAA, USGS

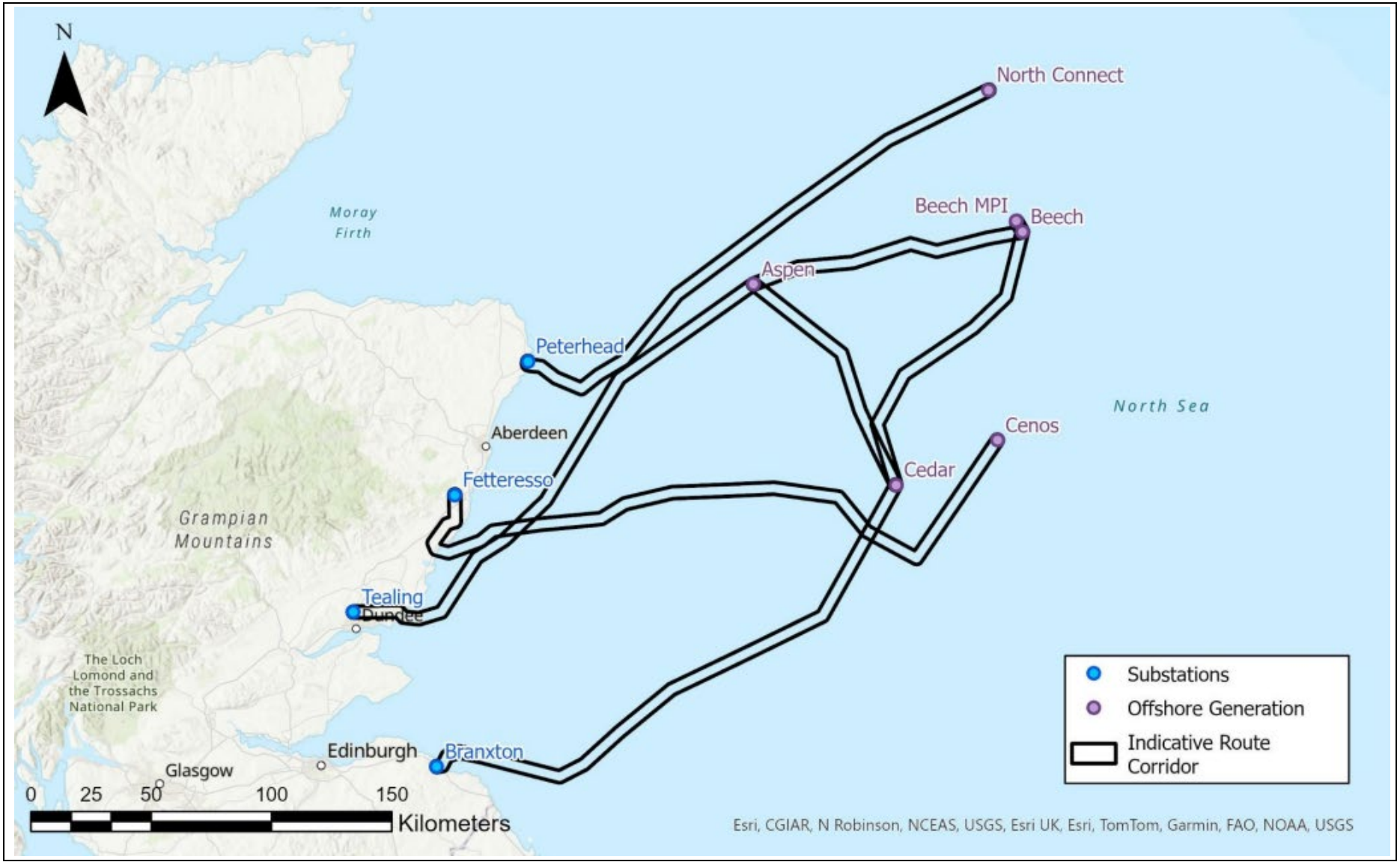
Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. The St Cyrus and Kinnaber Links SSSI (designated for birds, grassland, moths and saltmarsh) is unavoidable for the route to Fetteresso, the Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) for the route to Branxton, and the Durham Coast SAC (designated for vegetated sea cliffs) and Durham Coast SSSI for the route to Hawthorn Pit. The East of Gannet and Montrose Fields MPA is also not possible to avoid as the Cenos generation site is located within the MPA. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes areas of Annex I reef for the route to Hawthorn Pit. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. There is potential for short-term negative effects on	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).					
Geology, Soils and Land Use (GSL) The Milton Ness SSSI (designated for geological features) is unavoidable for the route to Fetteresso, and there are areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. There is potential for direct and indirect effects within these sensitive areas. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure, and areas of primarily very good, good to moderate and poor quality agricultural land that are within the route corridors and cannot be avoided (-2).	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).					
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and pipelines for several routes, the Druridge Military Area and dredge and spoil dumping sites within the route to Hawthorn Pit, and onshore infrastructure (-2). There is also potential for short-term indirect effects on avoidable material assets and infrastructure, such as cables and pipelines and onshore infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities. There is potential for in-combination impacts, as several routes within the option cross offshore or partially share a route corridor, and several would need to cross routes within HND1 and HNDFUE ScotWind. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+1	0/+1	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks, scheduled monuments, and listed buildings within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities, and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).	-1	0	0	Direct & Indirect	Yes
Landscape / Seascape and Visual Amenity (L)	-2	-2	-2	Indirect	No

There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. The Durham Heritage Coast and areas of National Trust land cannot be avoided within routes to Hawthorn Pit, and there is potential for short-term impacts within these areas. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.					

INTOG – TOG_R010T			
Total Length (km)	**Offshore Length (km)**	**Onshore Length (km)**	**In Recommended Design (Y/N)**
1361km	1308km	53km	No
Routes Included in Design and Capacity			
There are 9 routes included in this design: Cenos to Fetteresso 400kV (1500MW); Aspen to Tealing 400kV (1500MW); Aspen to Beech (2*500MW); Beech to Beech MPI (4*500MW); Beech to Cedar (2*500MW); Cedar to Aspen (2*500MW); Cedar to Nr Branxton (2000MW); North Connect to Peterhead1 (1400MW); Beech to Bremen (2000MW).			
Design Description			
Design TOG_R010T utilises the consented North Connect connection to Peterhead1 and connects the TOG sites to the closest available onshore points with early availability. Offshore the Aspen, Cedar and Beech TOG sites are coordinated while Cenos has a radial connection. This option involves the following proposed connections.			


N
North Connect
Beech MPI
Beech
Aspen
Moray Firth
Peterhead
North Sea
Cenos
Aberdeen
Cedar
Fetteresso
Grampian Mountains
Tealing
Dundee
The Loch Lomond and the Trossachs National Park
Edinburgh
Branxton
Glasgow
0 25 50 100 150
Kilometers
Substations
Offshore Generation
Indicative Route Corridor
Esri, CGIAR, N Robinson, NCEAS, USGS, Esri UK, Esri, TomTom, Garmin, FAO, NOAA, USGS

Summary Environmental Assessment	S-t	M-t	L-t	Direct / Indirect	Cum
Biodiversity, Flora and Fauna (BFF) There are several designated sites and areas of known sensitivity that cannot be avoided by cable routes within the option. The St Cyrus and Kinnaber Links SSSI (designated for birds, grassland, moths and saltmarsh) is unavoidable for the route to Fetteresso, the Outer Firth of Forth and St Andrews Bay Complex SPA (designated for nine species of breeding seabirds and 16 species of non-breeding seabirds and waterfowl, as well as its overall waterfowl, breeding seabird and non-breeding seabird assemblages) for the routes to Tealing and Branxton, the Buchan Ness to Collieston Coast SAC (designated for vegetated cliff habitat), SPA (designated for seabirds, including black-legged kittiwake, common guillemot, herring gull, European shag and northern fulmar), and Bullers of Buchan Coast SSSI for the route to Peterhead1. The East of Gannet and Montrose Fields MPA is also not possible to avoid as the Cenos generation site is located within the MPA. There is potential for significant short-term direct and indirect effects on designated features within these sites in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. This could include injury, disturbance and displacement of designated species and loss or damage to habitat (-3). There are also several designated sites that are avoidable within the route corridors, but for which there is potential for short-term indirect effects in the construction and decommissioning phases and during cable maintenance activities, when considered cumulatively. There is potential for direct and indirect effects on other sensitive features outside of designated sites that are within the 5km indicative route corridors and cannot be avoided. This includes areas of Annex I reef for the routes to Tealing, Branxton and Peterhead1. These impacts are primarily anticipated to be short-term, but there may be long-term impacts on habitat in the footprint of infrastructure (-2). In general, there is also potential for direct and indirect disturbance or damage to local habitats and species outside of designated sites during the construction and decommissioning phases and during any cable maintenance activities (-1).	-3	-2	-2	Direct and Indirect	Yes
Population and Human Health (PHH) There is unlikely to be potential for significant negative effects on PHH, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

option, however there is potential to avoid all of these areas. There is potential for short-term negative effects on local populations from cabling and long-term effects due to the presence of onshore infrastructure. There is potential for positive effects from facilitation of new renewable energy infrastructure (+1).					
Geology, Soils and Land Use (GSL) The Milton Ness SSSI (designated for geological features) is unavoidable for the route to Fetteresso, and there are areas of sensitive Annex I reef that are within the route corridors and cannot be avoided. There is potential for direct and indirect effects within these sensitive areas. These impacts are primarily anticipated to be short-term, but there may be long-term impacts in the footprint of infrastructure (-2). There is potential for temporary negative effects due to loss or displacement of offshore and onshore soils and long-term effects in the footprint of infrastructure, and there are areas of primarily good to moderate and poor-quality agricultural land that are within the route corridors and cannot be avoided (-2).	-2	-2	-2	Direct and Indirect	Yes
Water (W) There is unlikely to be potential for significant negative effects on W, as there are no unavoidable sensitivities of significance. There is potential for temporary short-term effects on water quality during the construction and decommissioning phases, as well as during any cable maintenance activities (-1).	-1	0	0	Indirect	No
Air (A) There is unlikely to be potential for significant negative effects on A, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary dust generation and air emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes

Climatic Factors (CF) There is unlikely to be potential for significant negative effects on CF, as there are no unavoidable sensitivities of significance. There is potential for short-term temporary GHG emissions from vehicles and machinery in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities (-1). There is also potential for the temporary loss of GHG sequestering material in the vicinity of the works during the construction and decommissioning phases and during any cable maintenance activities. There is potential for positive effects in the medium to long-term from facilitation of new renewable energy infrastructure, supporting decarbonisation of the energy sector (+1).	-1	-1/+1	-1/+1	Indirect / Indirect	Yes
Material Assets and Infrastructure (MA) There is potential for short-term direct effects on unavoidable material assets and infrastructure, including offshore cables and pipelines for several routes, including the cables for the Seagreen wind farm and the Buchan Deep Demo wind farm, areas of high high shipping intensity that cannot be avoided for the route from North Connect to Peterhead1, and onshore infrastructure. There is also potential for short-term indirect effects on avoidable material assets and infrastructure, such as offshore oil and gas wells, cables and pipelines and onshore infrastructure, during the construction and decommissioning phases, as well as during any cable maintenance activities (-2). There is potential for in-combination impacts, as several routes within the option would need to cross offshore, and several would need to cross routes within HND1 and HNDFUE ScotWind. There is also the potential for medium to long-term indirect positive effects through the facilitation of new renewable energy infrastructure (+1).	-2	0/+2	0/+2	Direct & Indirect	No
Cultural, Architectural and Archaeological Heritage (CH) There is unlikely to be potential for significant negative effects on CH, as there are no unavoidable sensitivities of significance. There are wrecks and scheduled monuments within route corridors of the option; however, these are all avoidable. There is potential for indirect impacts on avoidable known heritage assets, including impacts on setting during the construction and decommissioning phases and during cable maintenance activities,	-1	0	0	Direct & Indirect	Yes

and for short-term direct and indirect impacts on previously undiscovered heritage features during the construction phase (-1).					
Landscape / Seascape and Visual Amenity (L) There is unlikely to be potential for significant negative effects on L, as there are no unavoidable sensitivities of significance. There are urban areas within route corridors of the option, however these can be avoided. In general, there is potential for short-term impacts on local landscapes and views during the construction and decommissioning phases along cable routes (-1). There is potential for long-term effects from development of infrastructure in the vicinity of new substations/converter stations.	-2	-2	-2	Indirect	No

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