March 2026

# Holistic Network Design Implementation Plan

## Habitats Regulations Assessment Report



NESO
National Energy System Operator

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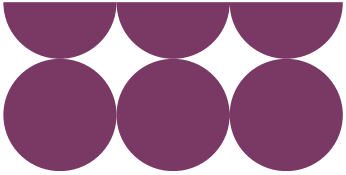


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# 1. Executive Summary

Introduction

Likely Significant Effects (HRA Screening)

Information to Inform Appropriate Assessment

Derogations (not contained in this report)



# Introduction

## Overview of NESO

The UK's 2023 Energy Act set the legislative framework for an independent system planner and operator to help accelerate Great Britain's energy transition. This led to the establishment of the National Energy System Operator (NESO). An independent, public corporation at the centre of the energy system, NESO takes a whole system view to secure NESO's vision for reliable, clean and affordable energy. NESO's work will be the catalyst for change across the global community, forging the path to a sustainable future for everyone.

Tackling climate change is truly the challenge of NESO's generation, addressing energy security, sustainability and affordability for everyone is at the forefront of the global agenda and drive to meet net zero. NESO will look across the whole energy system to meet these challenges and transition to a low-carbon future, embracing new technologies and cleaner generation sources, always with the cost to the consumer in mind.

NESO's three primary duties are:

- Net zero - enable the government to deliver on its legally binding greenhouse emissions targets
- Efficiency and economy - promoting efficient, coordinated, and economic electricity and gas networks
- Security and supply - ensuring security of supply for current and future consumers of electricity and gas.

## Overview of Offshore Coordination

The Offshore Coordination (OC) Team was set up by NESO (previously National Grid Electricity System Operator) with the support from Ofgem and the Department for Energy Security and Net Zero (DESNZ). Offshore Coordination contributes to the Offshore Transmission Network Review (OTNR) which was set up in July 2020. Its purpose is to enable the vital role of offshore wind in meeting the UK Government's targets for net zero. The Terms of Reference (ToR) for Offshore Coordination set out the ambition for NESO to design coordinated offshore wind recommendations for a variety of different offshore wind leasing rounds. These included ScotWind, Innovation Targeted Oil and Gas (INTOG) and Celtic Sea. The completion of these design recommendations totals over 53 GW across 34 different projects of offshore wind across Holistic Network Design (HND), HND Follow Up Exercise (HNDFUE), Celtic Sea and INTOG.

## The Habitats Regulations Assessment for OC

A Habitats Regulations Assessment (HRA) is being undertaken on the HND Implementation Plan which covers all the latest GB network designs captured within HND, HNDFUE (as of the end of August 2024), INTOG and Celtic Sea. Whilst it is not mandated that OC carry out an

HRA, due to the size and scope of the design exercises, carrying out these assessments will ensure NESO's recommendations on study corridors have given the appropriate level of consideration to environmental concerns.

In summary, HRA is:

- An iterative series of assessments, that may be required under the Conservation of Habitats and Species Regulations 2017 (as amended), The Conservation (Natural Habitats, &c.) Regulations 1994 (applicable in Scotland), and Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended), for any plan or project that could affect European designated sites for nature conservation.
- European sites are Special Areas of Conservation (SACs), Special Protection Areas (SPAs), candidate Special Areas of Conservation (cSACs), potential Special Protection Areas (pSPAs) and, as a matter of Government policy, Ramsar sites (wetlands of international importance).

The HRA for OC follows the process required by Scottish, English and Welsh HRA Regulations. The stages of the HRA are represented in the diagram below.

NESO has commissioned AECOM to undertake an independent and objective HRA. This Derogation Report has therefore been prepared for OC by AECOM on behalf of NESO.

## This Habitats Regulations Assessment Report

This document sets out the first and second stages of the HRA process, known as the Test of Likely Significant Effects (also known as HRA screening) and Appropriate Assessment.

### Likely Significant Effects (LSE)

The objective of this stage is to 'screen out' those plans and projects (or elements thereof) that can, without any detailed appraisal, be concluded to be unlikely to result in significant Adverse Effects on Site Integrity (AEoSI), usually because there is no mechanism for an adverse interaction. In this report the LSE stage is treated as a high-level analysis intended primarily to focus the rest of the assessment on those schemes which pose a credible pathway for effect. In practice, 'likely' really means 'possible' and a 'significant' effect is one where reasonable scientific doubt remains as to whether it would affect the ability of a European site to achieve its conservation objectives.

### Appropriate Assessment

Appropriate assessment is not a technical term; it is understood to mean whatever level of assessment is appropriate to form a conclusion regarding effects on the integrity (coherence of structure and function) of European sites. As such it has no pre-ordained methodology; the steps involve a more detailed assessment than the Likely Significant Effects stage and the methodology is tailored to the specific impacts requiring investigation and the interest features of the relevant European sites. At the appropriate assessment stage there is also consideration of mitigation measures. As a plan level assessment there are no detailed design elements to base specific mitigation on. As such, the mitigation used as part of the Appropriate Assessment is considered standard practice in the industry.

This Appropriate Assessment has concluded that four of the study corridors could not (at the plan level) be ruled out as leading to adverse effects on the integrity of European sites even when the potential for mitigation was considered. This was because they all traversed European sites in a manner that was likely to result in habitat loss of qualifying features even after mitigation. These four corridors were therefore taken forward to Derogation.

# 2. Introduction

The Project

Legislative Framework

Statutory Requirements for Assessment of European Sites



This HRA Report has been prepared by AECOM on behalf of the National Energy System Operator (NESO), the organisation responsible for planning and operating the electricity system in Great Britain, as part of National Grid.

# The Project

## Overview of NESO

The UK's 2023 Energy Act set the legislative framework for an independent system planner and operator to help accelerate Great Britain's energy transition. This led to the establishment of the National Energy System Operator (NESO).

NESO's three primary duties are to: enable the government to deliver on its legally binding greenhouse emissions targets; promote efficient, coordinated, and economic electricity and gas networks; and ensure security of supply for current and future consumers of electricity and gas.

## Overview of Offshore Coordination (OC)

The Offshore Coordination Team was set up by NESO (previously National Grid Electricity System Operator) with the support from Ofgem and the Department for Energy Security and Net Zero. Offshore Coordination contributes to the Offshore Transmission Network Review (OTNR) which was set up in July 2020 to play a key role in enabling the vital role of offshore wind in meeting the UK Government's targets for net zero. The Terms of Reference (ToR) for Offshore Coordination set out the ambition for NESO to design coordinated offshore wind recommendations for a variety of different offshore wind leasing rounds. These included ScotWind, INTOG and Celtic Sea. The completion of these design recommendations totals over 53GW across 34 different projects of offshore wind across Holistic Network Design (HND), HND Follow Up Exercise (HNDFUE), Celtic Sea and Innovation Targeted Oil and Gas (**Figures 1 to 4** below).

For ease of reference the corridors in English, Scottish and Welsh waters are as follows.

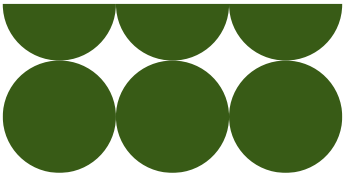
Study corridors in English waters:

- Ballantrae_to_Pentir
- PA_1_to_Birkhill_Wood
- PA_2_to_Berwick_Bank
- R4_1_to_Birkhill_Wood
- R4_2_to_Birkhill_Wood
- R4_3_to_Weston_Marsh
- R4_4_to_Bodelwyddan
- R4_5_to_Penwortham
- R4_6_to_Penwortham

- SW_E1a_to_Hawthorn_Pit
- SW_E1a_to_Lincolnshire_Connection_Node
- SW_E1a_to_Branxton
- SW_E1c_1_to_Lincolnshire_Connection_Node
- SW_E1c_2_to_Weston Marsh
- SW_E2a_2_to_Near_Richborough
- INTOG Cedar_to_Branxton
- PDA1_to_Llandyfaelog
- PDA2_to_South_Wales_Connection_Node
- PDA3_to_Pyworthy

Study corridors in Scottish waters:

- Ballantrae_to_Pentir
- Kilmarnock_South_to_Ballantrae
- PA_2_to_Berwick_Bank
- SW_E1a_to_Hawthorn_Pit
- SW_E1a_to_SW_e1b
- SW_E1a_to_Fiddes
- SW_E1a_to_Lincolnshire_Connection_Node
- SW_N1_to_Spittal
- SW_N4_to_Arnish_(Lewis)
- SW_NE4_to_New_Deer_(ES26)
- SW_NE7_to_Peterhead
- SW_W1_to_Ballantrae
- Shetland_to_Blackhillock
- SW_E1a_to_Branxton
- SW_E1c_1_to_Lincolnshire_Connection_Node
- SW_E1c_1_to_SW_E1c_2
- SW_E1c_2_to_Weston Marsh
- SW_E2a_1_to_SW_E2a_2
- SW_E2a_2_to_Near_Richborough
- SW_E2a_2_to_SW_E1c_1
- SW_E2b_to_Peterhead_2
- SW_E2b_to_SW_E2a_1



- SW_E3_to_Fiddes
- SW_N2_to_Near_Dounreay
- SW_N3_to_Arnish
- SW_NE1a_to_Shetland
- SW_NE1b_to_Shetland
- SW_NE1c_to_Shetland
- SW_NE2_to_Spittal
- SW_NE3_to_New_Deer_2
- SW_NE4_to_New_Deer
- SW_NE6_to_Peterhead_2
- SW_NE7_to_Peterhead_DCSS
- SW_NE8_to_Peterhead_1
- Aspen_to_Beech
- Aspen_to_Fetteresso
- Beech_to_Beech_MPI
- Beech_to_Cedar
- Cedar_to_AspenCedar_to_Branxton
- North_Connect_to_Cenos
- Peterhead_to_Cenos
- Scaraben_to_Peterhead_2
- Scaraben_to_Sinclair

Study corridors in Welsh Waters:

- Ballantrae_to_Pentir
- R4_4_to_Bodelwyddan
- PDA1_to_Llandyfaelog
- PDA2_to_South_Wales_Connection_Node

## The Habitats Regulations Assessment for OC

A Habitats Regulations Assessment (HRA) is being undertaken on the HND Implementation Plan which covers all the latest GB network designs captured within HND, HNDFUE (as of the end of August 2024), INTOG and Celtic Sea. Whilst it is not mandated that OC carry out an HRA, due to the size and scope of the design exercises, carrying out these assessments will ensure NESOs recommendations on study corridors have given the appropriate level of consideration to environmental concerns.

Figure 1: The plan level study corridors included in the proposed design of HND, and SACS, SPAs, and Ramsar sites within 100 km of a study corridor

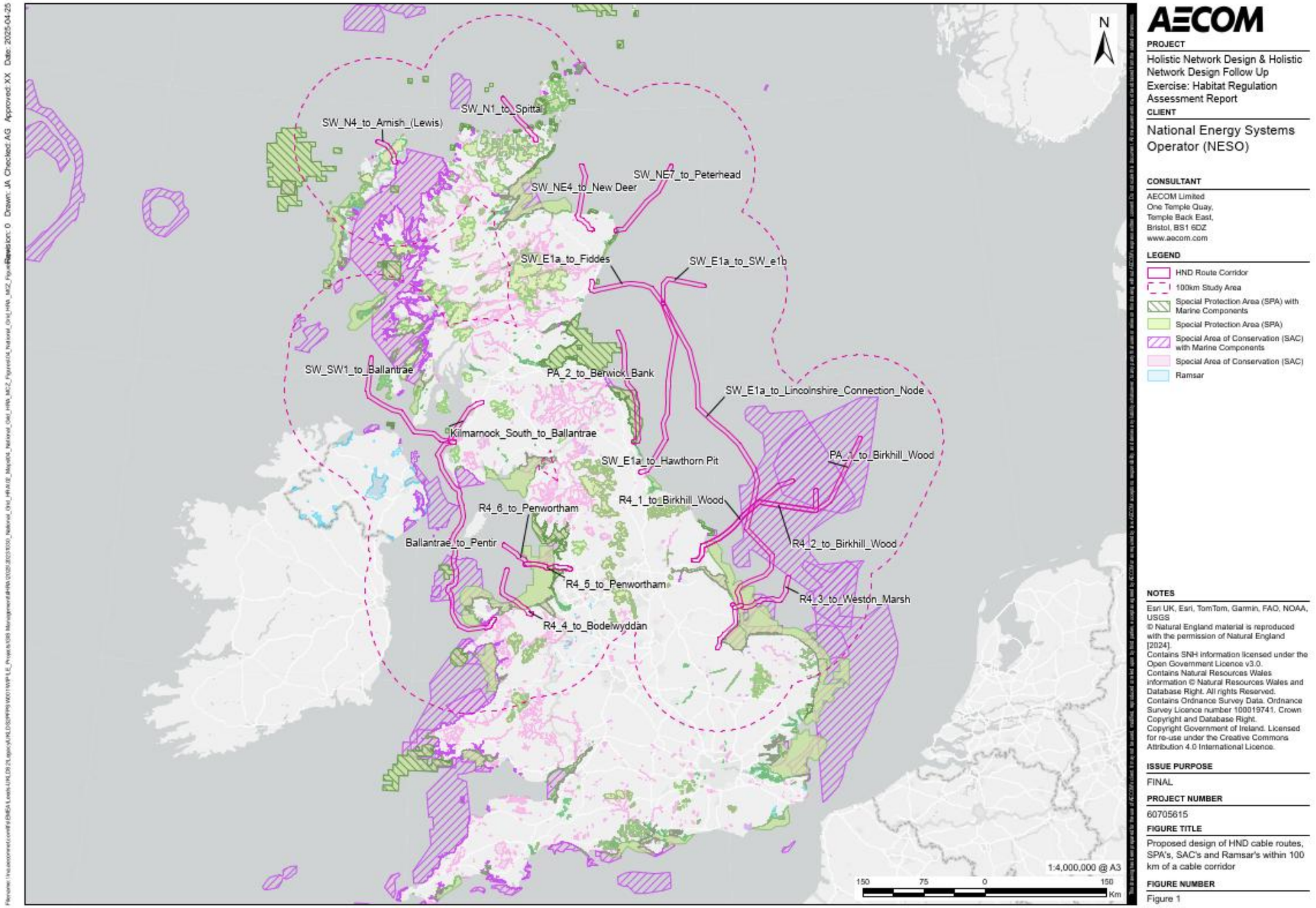


Figure 2: The plan level study corridors included in the proposed design of HNDFUE, and SACS, SPAs, and Ramsar sites within 100 km of a study corridor

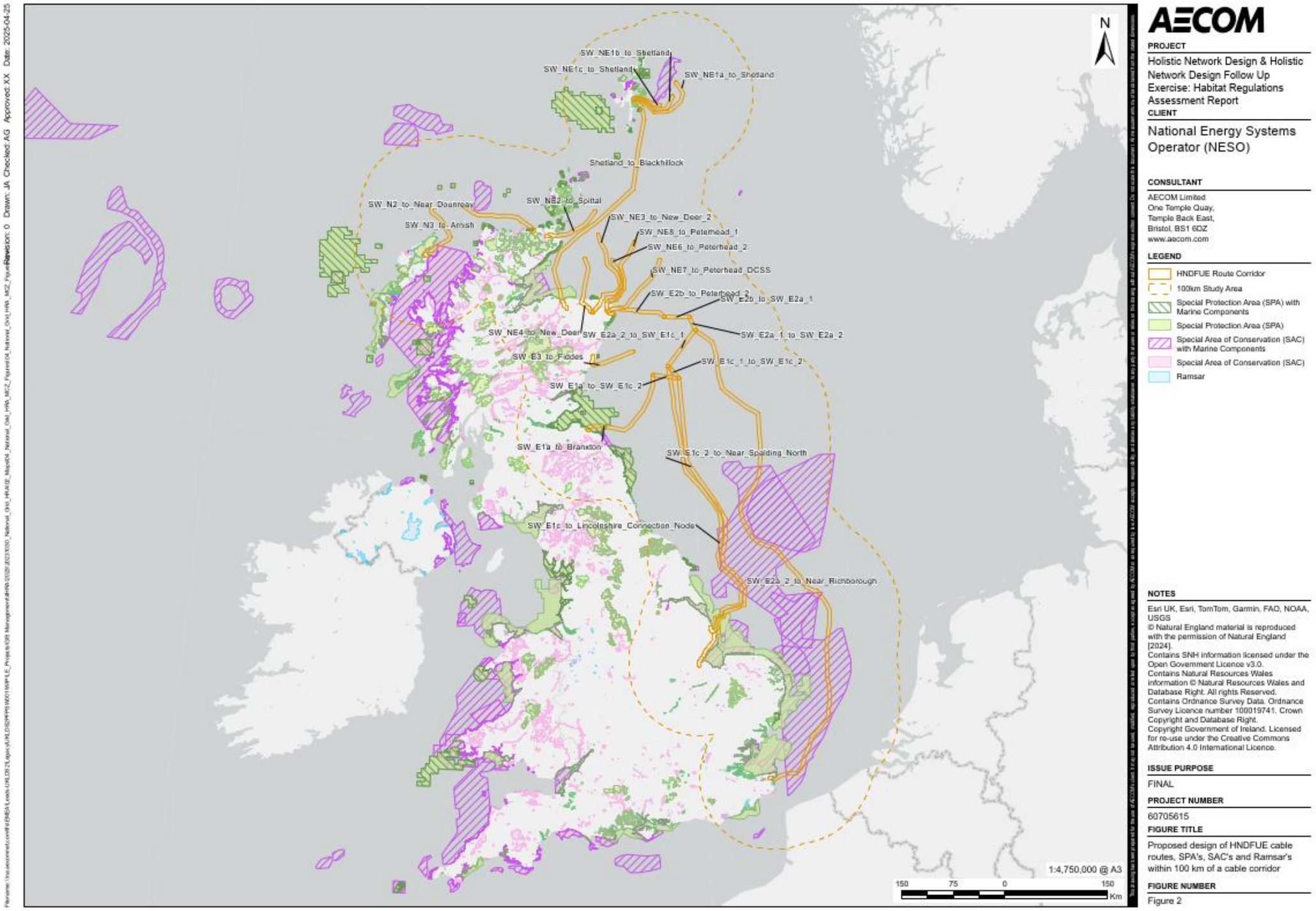


Figure 3: The plan level study corridors included in the proposed design of INTOG, and SACS, SPAs, and Ramsar sites within 100 km of a study corridor

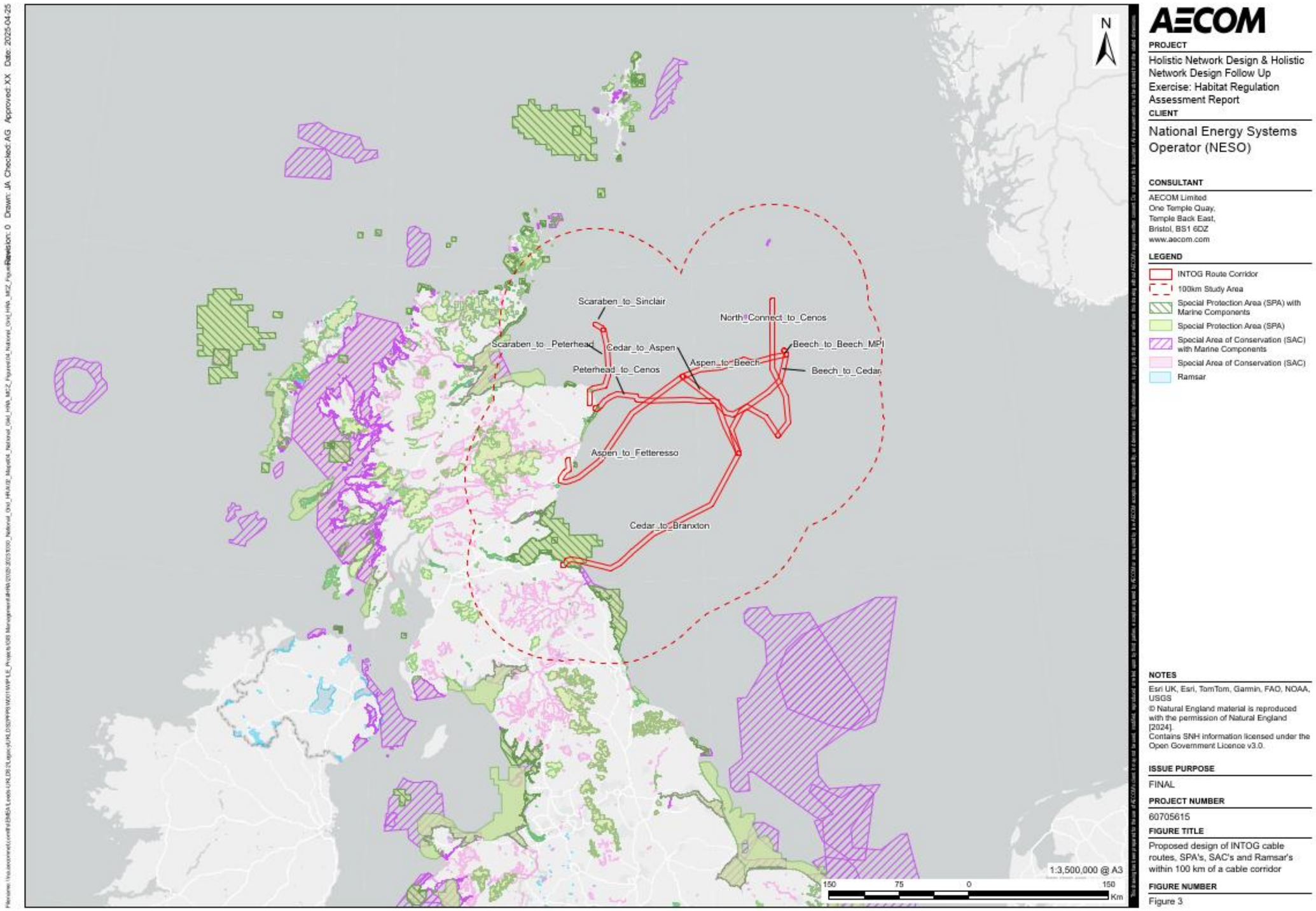
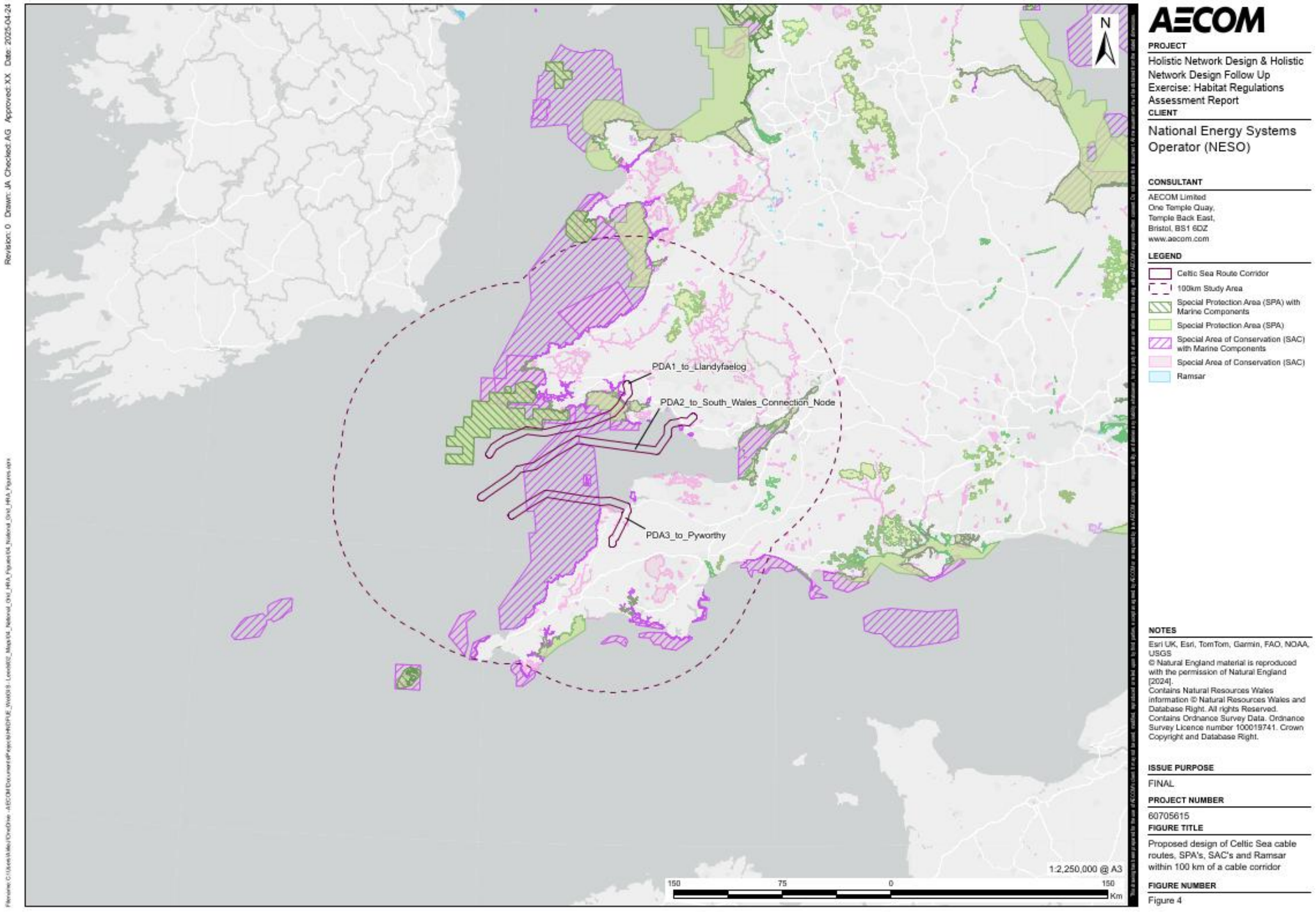


Figure 4: The plan level study corridors included in the proposed design of Celtic Sea, and SACS, SPAs, and Ramsar sites within 100 km of a study corridor



# Legislative Framework

This report presents an assessment of the implications of the plan on SACs, SPAs or Ramsar sites (or areas going through the designation process). These are collectively known as European sites[1]. The UK left the European Union (EU) on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 ("the Withdrawal Act"). While the UK is no longer a member of the EU, the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[2] makes it clear that a requirement for Habitats Regulations Assessment will continue for English, Welsh, and Scottish territorial waters[3].

The HRA process applies the 'Precautionary Principle'[4] to European sites. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the European site(s) in question. To determine whether or not site integrity will be affected, an Appropriate Assessment should be undertaken of the Plan or project in question. **Figure 5** below sets out the legislative basis for Appropriate Assessment. Plans and projects that are associated with potential adverse impacts on European sites may still be permitted if there are no reasonable alternatives and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

[1] These are also known in England and Wales as Habitats Sites. For example, this is the term used in the National Planning Policy Framework: National Planning Policy Framework - GOV.UK. Although the UK is no longer part of the European Union and therefore no longer contributes to the Natura 2000 network, the term European sites is still widely used within the UK (https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site, or https://www.nature.scot/professional-advice/protected-areas-and-species/protected-areas/international-designations/european-sites).

[2] These don't replace the 2017 Regulations but are amendments to the regulations.

[3] In Scotland, the Habitats Directive and the Birds Directive are also transposed into law by The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended).

[4] The Precautionary Principle, which is referenced in Article 191 of the Treaty on the Functioning of the European Union, has been defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005) as: *"When human activities may lead to morally unacceptable harm* [to the environment] *that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. The judgement of plausibility should be grounded in scientific analysis".*

**Conservation of Habitats and Species Regulations 2017 (as amended)**

The Regulations state that:

*"A competent authority, before deciding to … give any consent for a plan or project which is likely to have a significant effect on a European site … shall make an appropriate assessment of the implications for the site in view of that sites conservation objectives… The authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site".*

Figure 5: The legislative basis for Appropriate Assessment

The key requirements are set out in Regulation 48 of The Conservation (Natural Habitats, &c.) Regulations 1994 (applicable in Scotland), Regulation 63 of The Conservation of Habitats and Species Regulations 2017 (applicable in England) and Regulation 28 of The Conservation of Offshore Marine Habitats and Species Regulations 2017 (applicable in both Scotland and England).

If Adverse Effects on Site Integrity (AEoSI) are identified, alternatives must be considered to avoid those effects. However, where no alternatives exist, and so an AEoSI remains, a further assessment is made, under the Habitats Regulations, as to whether the plan or plan element is required for IROPI. If the plan or plan element meets that IROPI test, compensatory measures will be required to maintain the overall national site network.

The overall process set out in the Habitats Regulations is typically referred to as a 'HRA' or, in Scotland, a Habitats Regulations Appraisal. Throughout this Report the term HRA is used for the overall process with the term Appropriate Assessment only used for the specific stage of that name.

The competent authority for the HND Implementation Plan would be NESO, while that for each planning application for subsequent Nationally Significant Infrastructure Projects would be the Secretary of State of the Department for Energy Security and Net Zero (DESNZ. In Scottish waters, Marine Directorate for Scotland Licencing Operations Team (MD-LOT) will be consulted through this process, whilst in English waters, this role is performed by the Marine Management Organisation (MMO) and (for NSIPs) The Planning Inspectorate. Due to the inherent similarities between the Scottish and English and Welsh Habitats Regulations, this single HRA Report is provided covering European sites in Scottish, English, and Welsh territorial and offshore waters.

# 3. Assessment Methodology

Tiering of HRA

Likely Significant Effects (HRA Screening)

Scope of the HRA Report

In-combination assessment

Appropriate Assessment

Derogation (Not contained in this report)



There is general European Commission (EC) guidance on HRA[5], and in 2021 government published high level guidance of HRA generally[6]. Moreover, DTA Publishing has produced a Habitats Regulations Assessment Handbook[7] which has no formal status. All of these sources of guidance have been drawn upon in devising the methodology for this HRA. AECOM has also drawn on experience producing high-level HRA reports for the MMO. **Figure 6** outlines the broad stages of the HRA process.

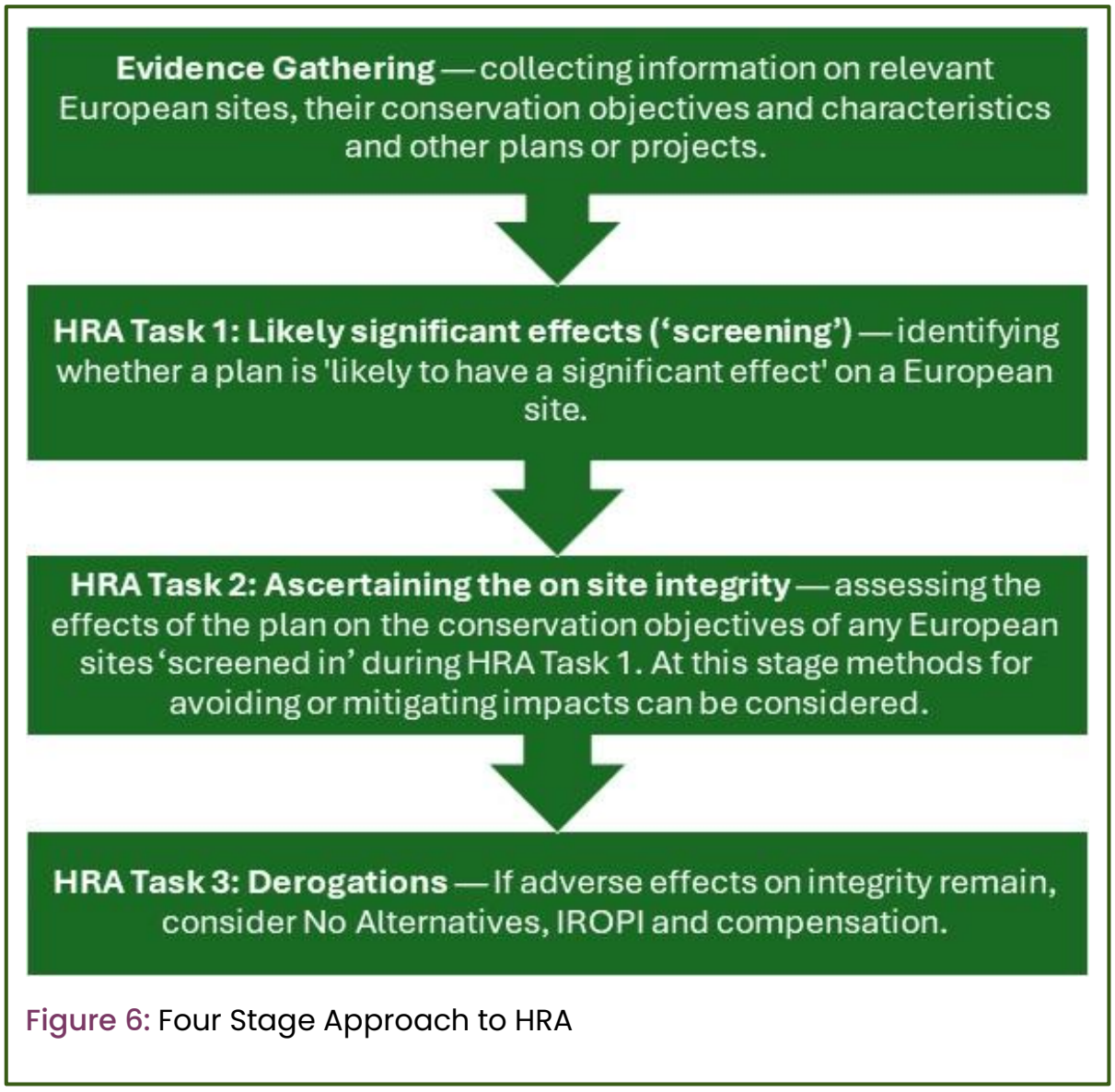



Figure 6: Four Stage Approach to HRA

[5] Commission notice Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC 2021/C 437/01 - Publications Office of the EU

[6] Habitats regulations assessments: protecting a European site - GOV.UK

[7] DTA Publications | The Habitats Regulations Assessment Handbook and Journal

In producing the HRA of the HND Implementation Plan AECOM has been cognisant of a series of rulings from the Court of Justice of the European Union (CJEU), which have given added prominence to the task of HRA:

Firstly, any conclusion of 'no likely significant effect' must be made prior to consideration of any measures to avoid or reduce harm (Gov.UK, 2021). The determination of LSE should not constitute an attempt at detailed technical analysis and should not consider mitigation. That properly belongs in the appropriate assessment.

Secondly, the conclusions of an appropriate assessment must be 'certain' (in other words 'no reasonable scientific doubt remains'). At the same time, it is crucial to note (and particularly relevant to the HRA of HND, HNDFUE, INTOG and Celtic Sea) the nuance that relates to a multi-stage planning process. See below for a discussion of tiering in HRA.

Thirdly, European Court of Justice case C-461/17 (known as the Holohan ruling) has confirmed that an appropriate assessment must ensure that a) where interest features of an SAC or SPA are outside the European site boundary they must be taken into account (this is routinely done in the UK through consideration of functionally-linked land); and b) if there are habitats and species for which the site is not designated but which are essential to ensuring the site achieves its conservation objectives these must also be covered in the appropriate assessment.

The HRA is undertaken by the competent authority i.e. the body which gives 'consent, permission or other authorisation' for the plan to be adopted. For this plan the competent authority is considered to be NESO itself. Each developer will also have to undergo HRA processes at the individual project-level as they develop the schemes that relate to each study corridor. Whilst recommendations can be made to developers, it will be the developer's responsibility to collect appropriate data for their route and demonstrate they can implement without an AEoSI.

# Tiering of HRA

There is a distinction between the level of detail required in a plan for it to pass the derogation tests, and that required for a subsequent planning application. This is because a plan is an intentionally higher-tier document that by design does not present all the details for a particular harmful proposal. In contrast, once planning permission is granted there is no further tier in the planning approval process. As such all matters regarding the derogations including compensation must be fully detailed at the time planning consent is granted.

This approach reflects Advocate-General Kokott's (2005) advice on HRA in multi-stage planning processes: *'It would also hardly be proper to require a greater level of detail in preceding plans* [than lower tier plans or planning applications or Development Consent Orders] *or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated on one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the*

*procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure'.*

It is not a requirement of HRA legislation, but the 2021 government guidance cited earlier identifies that during the appropriate assessment stage the mitigation hierarchy should be followed where possible, seeking to avoid an effect, before considering mitigation. Note that at this plan level it is not necessarily always possible to fully explore a potential impact and thus determine its magnitude due to a) the fact that 5 km corridors are included in the plan whereas the footprint of individual schemes will be much smaller, and b) there may be further information available at the project-level than at the plan level which would enable a more precise and refined assessment at that lower tier of the planning system.

There are also some impact pathways that cannot be considered at this plan level. For example, it is not possible to assess impacts on longshore sediment drift at plan level as these details are not available and the appropriate distance to use for assessment of longshore drift is unique to each stretch of coastline. Additionally, this is a physical processes assessment and one that would typically be modelled at project level. However, based on the information available this HRA does generally explore whether there are options for an impact to be avoided (by for example detailed routing) before discussing options for mitigating an impact.

When it comes to derogations, for a plan such as the HND Implementation Plan, the information required to pass the derogation tests must be sufficient to conclude that there is no reason to believe that they could not be passed when a subsequent planning application is submitted. However, that degree of certainty does not require all details of the project and its compensatory measures being known or devised at the time the HND Implementation Plan is adopted.

# Likely Significant Effects (HRA Screening)

Following evidence gathering, the first stage of any HRA is an LSE test - essentially a risk assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is:

"Is the plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?"

The objective is to 'screen out' those plans and projects (or elements thereof) that can, without any detailed appraisal, be concluded to be unlikely to result in likely significant effects, usually because there is no mechanism for an adverse interaction.

In this report the LSE stage is treated as a high-level analysis intended primarily to focus the rest of the assessment on those schemes which pose a credible pathway for effect. In practice, 'likely' really means 'possible' and a 'significant' effect is one where reasonable

scientific doubt remains as to whether the ability of a European site to achieve its conservation objectives would be hindered.

For the HND Implementation Plan the study corridors which form part of the recommended network designs, linking offshore wind generation sites (A) to their connections points (B) (also known as interface points) have been supplied by NESO. These have already been subject to Geographic Information System (GIS) analysis to identify potential routes, based on the constraints data and classification created in the initial data collection exercise. This provided an indicative 5 km wide study corridor and study corridor length for use in the HRA.

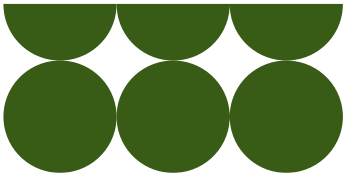
The HRA assumes that the final cable route (likely to be tens of metres wide) could be located anywhere within the 5 km wide study corridor in each case. This HRA also assumes as a precaution that some OHL could be involved beyond the substation, and this could be within the 5 km wide corridor. Since details of corridors after landfall are not known only the landfall has been assessed. The HRA also assumes that there will be a moderate amount of cable protection required for each marine scheme resulting in permanent habitat loss below the footprint of hard cable protection measures that are introduced. It is also assumed that for each individual cable project, the marine installation corridor will be routed to avoid sensitive habitats and to achieve the precautionary target burial depths as much as possible as informed by further data acquisition at the project level.

The HRA considers the conservation objectives of the European sites in **Appendix A** in devising the distances for screening. The conservation objectives for relevant European sites are presented in **Appendix B**. For example, for many onshore and coastal SACs in England, the conservation objectives focus on a requirement to maintain or restore:

- the extent and distribution of qualifying natural habitats and habitats of the qualifying species;
- the structure and function (including typical species) of qualifying natural habitats;
- the structure and function of the habitats of the qualifying species;
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- the populations of each of the qualifying species; and/or
- the distribution of qualifying species within the site.

For Special Protection Areas in England the conservation objectives focus on a requirement to maintain or restore:

- the extent and distribution of the habitats of the qualifying features;
- the structure and function of the habitats of the qualifying features;
- the supporting processes on which the habitats of the qualifying features rely;
- the populations of each of the qualifying features; and/or
- the distribution of qualifying features within the site.



These conservation objectives are then supplemented by a series of site-specific targets for attributes such as connectivity with supporting habitats, disturbance, air quality, food availability and various aspects of water quality (turbidity, nutrients, contaminants etc).

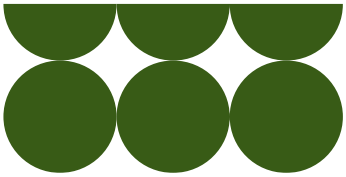
Scottish and Welsh European sites, and wholly marine European sites, present their conservation objectives differently but these also consist of overarching objectives covering factors such as the extent, quality and population of the qualifying features, with detailed attributes for the particular issues that may affect achievement of these objectives. Those have been referenced in identifying the relevant impact pathways for each European site and the relevant zones of influence to use in screening. The assessment included compensation sites i.e. those sites which lie outside European/Ramsar site boundaries but have been delivered specifically to compensate for adverse effects on the integrity of European sites due to particular consented projects. There is no central publicly available official register of such compensation areas, but they are identified on the OMREG website maintained by the company ABPMer (View the OMReg Map - ABPmer).

The report has reviewed each connection corridor (A to B) and considered whether a categorisation of no LSE can be determined. This is largely based on whether a given A or B, or probable connection corridor, lies within certain buffer distances. For the HRA screening exercise it was agreed through circulation of a Scoping Report (containing the methodology) in autumn 2023 to screen out a given A to B connection if it lies more than 100 km from the nearest coastal or marine European site and/or met several other criteria. The other criteria considered the fact that some marine receptors (seabirds, fish and marine mammals) travel much more than 100 km from their relevant European sites to forage and for other stages of their lifecycle, while most terrestrial receptors do not travel as far as 100 km. The refined criteria were still relatively broad to avoid making the LSE stage overly complicated and to avoid straying into the kind of detailed analysis that would be more appropriate for the 'Appropriate Assessment' stage.

This is similar to the approach adopted for the HRAs of English and Welsh Marine Plans, and Sectoral Marine Plan for Offshore Wind Energy in Scotland, where an initial 100 km buffer was deemed to be a quantifiable and objective area for a predominantly marine plan that is likely to encompass many of the mobile species interest features within designated sites that could be indirectly affected; for example, most seabirds are known to forage within 100 km of their breeding sites. Such a zone will also capture potential for effects 'in combination' with other plans and projects within the same zone. This is a much larger zone than required for sites designated entirely for their habitats (e.g. coastal saltmarsh or sub-tidal sandbanks), but those sites or features will then be ruled out as necessary in the Test of LSE.

## In-combination assessment at HRA Screening

It is a requirement of Regulation 105 of the Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and Regulation 28 of The Conservation of Offshore Marine Habitats and Species Regulations 2017, to not only assess the impacts of a development project alone, but also to investigate whether there might be 'in-combination' effects with other projects or plans. In practice, such an 'in-combination' assessment is of greatest



relevance when an impact pathway relating to a project would otherwise be screened out because it is considered not to result in LSEs.

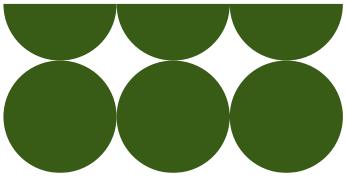
The deliberately large and inclusive zones used for screening in the LSE stage of this HRA are considered to have set appropriate zones for considering 'in combination' effects from other plans or projects, in that any other plan or project coming forward within the same zone of influence around a European site as these study corridors could have effects in combination with the proposed cable. No corridors have been screened out due to failure to consider 'in combination' effects. This is because of these large and inclusive zones used for screening, and because matters such as the magnitude of impact of a particular corridor have not been considered at screening. For example, no corridor has been screened out because the impact of the corridor alone is considered too small to be significant. The simple existence of an impact pathway (determined by the zone of influence) has been sufficient to screen in the corridor for appropriate assessment.

# Appropriate Assessment

Appropriate assessment is not a technical term; it is understood to mean whatever level of assessment is appropriate to form a conclusion regarding effects on the integrity (coherence of structure and function) of European sites. As such it has no pre-ordained methodology; the steps involve a more detailed assessment than the Likely Significant Effects stage and the methodology is tailored to the specific impacts requiring investigation and the interest features of the relevant European sites. At the appropriate assessment stage there is also consideration of mitigation measures. As a plan level assessment there are no detailed design elements to base specific mitigation on. As such, the mitigation used as part of the Appropriate Assessment is considered standard practice in the industry.

The Appropriate Assessment has been presented as a subsequent series of chapters after the tables presenting the determination of likely significant effects. An appropriate assessment is best presented as a narrative (rather than in tabular format), allowing for a detailed explanation of the issues. The appropriate assessment is organised based on one chapter for each potential impact pathway as the same impact pathway applies to many European sites. The relationship of each impact pathway used in this appropriate assessment to the JNCC and Natural England Pressure Activities Database (PAD) and Advice on Operations relating to cables is presented in **Table 1**.

The nature of the HND Implementation Plan is that there is limited spatial information or information specified within the plan regarding construction techniques. In line with Advocate-General Kokott's advice quoted earlier, the Appropriate Assessment is therefore as detailed as possible given the level of detail in the HND Implementation Plan, with recommendations for down-the-line assessments in more detail as individual applications are developed. As such the individual assessment of each potential impact pathway is broad, discussing the scientific understanding of that potential impact and the potential for mitigation at the project level, to indicate where it is possible to avoid or mitigate impacts through detailed design or implement specific techniques. Where there are particular impacts that are not able to be mitigated, then advice is also provided on that matter as it



could necessitate rerouting. Each section of the appropriate assessment contains a table listing all the affected corridors and presenting the assessment for each European site. In some cases in these tables 'N/A' is presented. These are corridors where no European sites were screened in for the relevant impact pathway. This is explained in the final column of each table.

## In-combination assessment at Appropriate Assessment

Section 7 of the Appropriate Assessment considers the in-combination effects within the context of potential for significant effects on European sites. It considers the impact pathways relating to the proposed study corridors to determine potential in-combination effects with other projects or plans. It also considers the potential for in-combination effects to occur between routes.

The assessment considers all potential impact pathways, including those screened out for individual cable routes considered not to result in LSE. While these impacts may not result in LSEs in isolation, acting in-combination with other impact sources the effects can be additive or synergistic, resulting in inter-project LSEs.

Checks for proposed and approved projects dealt with by competent authorities were undertaken to make an assessment on whether other projects in-combination have potential to result in significant effect on any European sites. This included searches of Development Consent Order applications on the National Infrastructure Planning portal (2025), developments listed on The Crown Estate leasing portal (The Crown Estate, 2012 & 2021), and marine licence applications listed on the MMO asset portal (Gov.UK, 2024; MMO, 2024) and the Marine.Gov.Scot portal (Scottish Government, 2025). As proposed study corridors are located throughout most English, Welsh and Scottish waters, the identified projects of interest are grouped by broad geographical regions.

# Derogation (Not contained in this report)

In certain circumstances, a plan making authority can allow a proposal that has failed the integrity test to go ahead. This is known as a derogation. A Local Plan (or the relevant part of the Local Plan that triggers the derogations) must pass all 3 sequential legal tests for a derogation to be granted. These legal tests are:

1. There are no feasible alternative solutions that would be less damaging or avoid damage to the site.
2. The proposal needs to be carried out for IROPI.
3. The necessary compensatory measures can be secured.

## Test 1: Consider Alternative Solutions

To allow a derogation the plan making authority must decide that there's no alternative solution that would be less damaging to the site. The plan making authority should work with the proposer and consider whether any alternative solutions are available. This might include considering whether the proposal could:

- happen at a different location;
- use different routes across a site; and
- change its scale, size, design, method or timing.

Alternatives must be suitable and need to meet the original objectives of the proposal.

An alternative solution is acceptable if it:

- achieves the same overall objective as the original proposal;
- is financially, legally and technically feasible; and
- is less damaging to the European site and does not have an adverse effect on the integrity of this or any other European site.

The proposer should provide the plan making authority with information about alternatives, or the lack of them. The plan making authority will need to judge if there are any acceptable alternatives. If there are, or appear to be, one or more alternative solutions, the plan making authority cannot grant the original proposal a derogation and the relevant part of the Local Plan must be removed. There is then no need to do test two or test three.

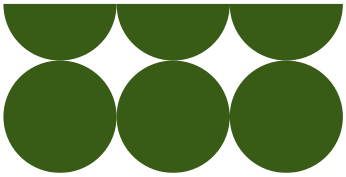
If there are no alternative solutions, the proposal passes test one and the plan making authority can move to test two.

## Test Two: Consider imperative reasons of overriding public interest

If there are no feasible alternative solutions, the plan making authority must next be able to show that there are imperative reasons of overriding public interest why the proposal must go ahead. These must justify the proposal, despite the damage it will or could cause to the European site.

The plan making authority must decide if the proposal is:

- imperative - it's essential that it proceeds for public interest reasons;
- in the public interest - it has benefits for the public, not just benefits for private interests; and
- overriding - the public interest outweighs the harm, or risk of harm, to the integrity of the European site that's predicted by the appropriate assessment.



According to government guidance, plans or projects that only provide short-term or very localised benefits are less likely to be able to show imperative reasons of overriding public interest than more strategic plans.

Some of the designated habitats and species of SACs are considered to be a special priority for conservation.

## Test 3: Secure compensatory measures

If there are no feasible alternative solutions and the plan making authority has shown that there are imperative reasons of overriding public interest, it is necessary to make sure that compensatory measures will be taken. These measures will need to fully offset the damage which will or could be caused to the site.

The plan making authority should work with the proposer and the relevant statutory nature conservation body (dependent on devolved administration area of the UK) to identify, design and (at an appropriate time) secure suitable compensatory measures, demonstrating adherence to an appropriate and recognised compensation hierarchy, such as Defra's best practice guidance for developing compensatory measures (Defra, 2021). The proposer will be expected to pay for the compensatory measures. The compensatory measures themselves must not have a negative effect on the national Site Network.

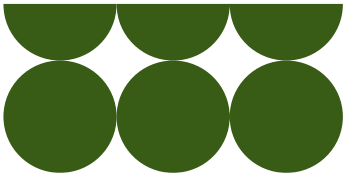
Compensatory measures can include creating or restoring the same or very similar habitat on areas of little or no conservation value:

- within the same site - if it exists; and
- at a suitable location outside the site.

If the area providing compensatory measures is not within the European site, it should become designated as part of the European site. In England and Wales, until that happens, it is protected by government planning policy (Habitats Regulations Assessments: protecting a European site - GOV.UK).

The plan-making authority must be confident that the measures will fully compensate for the negative effects of the proposal. The following should be considered:

- how technically feasible and effective the measures will be - based on scientific evidence and previous examples;
- how financially viable the measures are - the proposer must have enough funds to cover costs;
- how the compensation would be carried out, including how it'll be managed and monitored over the time that's needed, and how it's been secured;
- distance from the affected site - compensation closer to the site is generally preferred, unless measures further away will benefit the network of European sites as a whole; and



- how long the compensatory measures will take to reach the required quality and amount of habitat.

# Scope of the HRA Report

There is no guidance that dictates the scope of an HRA in all circumstances and the study area for this HRA Report is largely dictated by the linkages between impact pathways and European site designations. The scope of the assessment is primarily guided by the identified impact pathways (the source-pathway-receptor model) for the receptors assessed. This report covers construction and operation/maintenance for each route. Details of decommissioning are not available, but it can be assumed based on current knowledge that the decommissioning impacts will be similar to the construction impacts. At a project level it will be necessary to review decommissioning impacts in detail at the time decommissioning is being contemplated, to take account of advances in technology at the time any planning application for decommissioning is submitted.

Impact pathways are routes by which the installation, operation and maintenance and decommissioning phases of the corridors covered by this report can lead to an effect upon a receptor, the receptor for HRA being a European site or its qualifying features. An example of an impact pathway is visual and noise disturbance arising during any phase of the project. If there are ecological receptors sensitive to visual disturbance within a nearby European site (e.g., non-breeding overwintering birds), visual disturbance could alter their foraging and roosting behaviour, with potential to affect the integrity of the European site. In this example, the pathway is line of sight, and the potential zone of influence and magnitude of an impact can be considered on that basis. For other impact pathways (e.g., air pollution) there may be guidance that sets out appropriate distance-based zones of influence for assessment. For other pathways of impact and receptors, a professional judgment must be made based on the best available evidence.

As a starting point a 100 km zone of influence was used. This has then been refined taking account of the particular vulnerabilities and sensitivities to different impacts of European sites and qualifying interest features. In particular, it considers the fact that some marine receptors (seabirds, fish, and marine mammals) travel much more than 100 km from their relevant European sites to forage and for other stages of their lifecycle, while many terrestrial receptors travel much smaller distances. These zones of influence enable consideration of the possible presence of supporting habitats at a high level. That is largely the reason for using such large distances in screening, to capture functionally linked habitat. E.g. Seal Management Units (SMUs) and Marine Mammal Management Units (MMMUs) for a highly mobile receptor, and to consider inter site connectivity where possible[8]. At this stage, a conservative approach is applied by considering all relevant sites

[8] NRW recognises that the use of management units covering
extensive geographical areas can lead to AAs that involve a large number of SACs and
plans/projects, and this may, at times, be disproportionate to the risk to a marine mammal

designated for seals within an SMU. To better understand likely impacts from a specific development, further assessment of effects to breeding populations associated with these sites will occur at the project level due to the seasonality of this receptor and dependence upon project-specific information (e.g. timing of works).

Additionally, consideration of supporting habitats at this stage is limited to designated European Sites. The 'changes to prey' impact pathway considers this to a degree, however elements such as herring and sand eel spawning grounds, for example, require consideration at project level.

This is similar to the approach undertaken on the HRA of the various English and Welsh Marine Plans which considered impacts not only on English and Welsh designated sites but also Scottish and Northern Irish designated sites. It is therefore considered appropriate for Scottish and Northern Irish waters. For that project, a series of potential impact buffer zones were agreed with stakeholders (including Natural England, Natural Resources Wales (NRW) and Joint Nature Conservation Committee (JNCC)). These were, in summary:

- *Migratory (diadromous) fish*: There are European sites in the UK that are designated for the following species of migratory fish: Atlantic salmon (*Salmo salar)*, twaite shad (*Alosa fallax*), allis shad (*A. alosa*), river lamprey (*Lampetra fluviatilis*) and sea lamprey (*Petromyzon marinus*). There are also Ramsar sites designated partly for their fish assemblage such as Severn Estuary Ramsar site which includes migratory sea trout and European eel. These species are known to travel much further than 100 km on migration;

- *Freshwater pearl mussel (Margaritifera margaritifera)*: This species is dependent on diadromous fish (specifically Atlantic salmon but also brown trout) for part of its life cycle (Skinner et al., 2003) and as such can be affected by works occurring more than 100 km from SACs designated for the species, if those works affect fish migration;

- *Marine mammals*: The four species of marine mammal for which SACs are designated are known to potentially travel much further than 100 km. These are common seal (*Phoca vitulina*), grey seal (*Halichoerus grypus*), harbour porpoise (*Phocoena phocoena*) and bottlenose dolphin (*Tursiops truncatus*);

- *Long-distance foraging seabirds*: Seven species of seabird for which SPA/Ramsar sites are designated are known to regularly forage more than 100 km and up to 1350 km from their nesting sites;

- *Terrestrial fauna other than birds*: Some terrestrial mammals, notably otters and bats, can travel distances of several kilometres from their burrows and roosts, while other mobile terrestrial species for which SACs are designated (such as great crested newt) only travel short distances; and

SAC feature (NRW, 2025). JNCC have communicated a similar stance through consultations, stating that the number of sites being assessed should be narrowed down based on potential impact pathways. This impact pathway driven approach to appropriate assessment has been implemented by this HRA.

- *Terrestrial birds*: Terrestrial birds of prey and waterfowl and waders also often travel several kilometres to forage, away from their nesting and roosting places, though not as far as 100 km.

To address these groups, the following approaches have been taken. The approach below, basing the assessment on the zone of influence and assuming all activities could occur within the study corridor, enables the HRA to present a worst-case assessment throughout. At the same time, the entire purpose of defining 5km study corridors rather than precise cable routes (which may only need to be tens of metres wide) is to enable flexibility to avoid features or European sites where possible. This flexibility has also been taken into account in the assessment. For example, if only a small part of a study corridor overlaps with a European site it has been assumed that there are options available for avoiding that European site rather than traversing it. This would need to be reviewed at the project level for any Development Consent Order, during detailed design.

## Migratory fish and freshwater pearl mussel

For the English and Welsh Marine Plan HRAs, and the Scottish Sectoral Marine Plan for Offshore Wind Energy, the coastal regions of the UK were divided into broad regions for consideration of migratory fish (**Figure 7**; ABPmer 2014; 2017b). For consistency, these regions have been considered throughout the assessment. This is on the basis that, with the level of detail currently available about the cable schemes, potential disruption of migration could not be dismissed. A complementary approach was also applied to the European sites designated for freshwater pearl mussel, where the migratory fish species they depend on are also present.

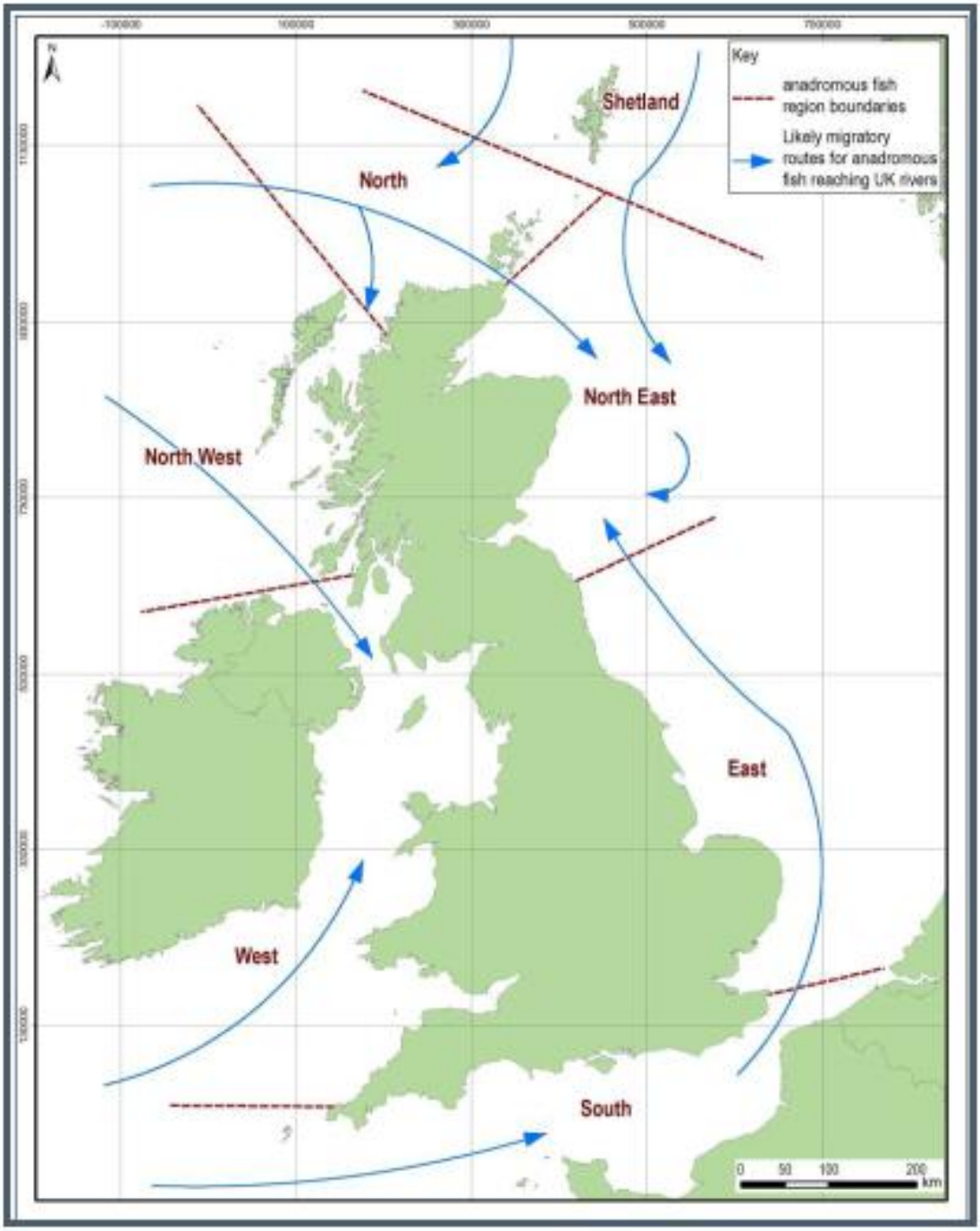



Figure 7: Location and extent of coastal regions (ABPMer, 2014)

## Marine mammals

Disturbance and mortality (particularly due to underwater noise) are particularly significant considerations for marine mammals under HRA given the standard conservation objective for European sites with these species as qualifying features: to avoid, in the SAC, disturbance of the species. For example, as a result of disturbance, harbour porpoise density is

significantly reduced for several kilometres away from seismic surveys and impact pile driving (e.g. Thompson *et al.* (2013), Brandt *et al.* (2011) and Dähne *et al.* (2013)).

To account for the highly mobile and transient nature of marine mammal species, and potential implications of local impacts on wider populations, all designated sites within the species-specific MMMUs, published by the Inter Agency Marine Mammal Working Group (IAMMWG) (IAMMWG, 2023), have been screened in. These MMMUs have been defined by the IAMMWG based on their understanding of the biological population structure of these species, and the ecological differentiation of these populations (considering political boundaries and the management of human activities).

There are currently no IAMMWG agreed MMMUs for seals. However, the Special Committee on Seals (SCOS) has identified SMUs (SCOS, 2022). Therefore, screening for seals will primarily adopt these, with the consideration of new data on foraging ranges for seals as reported in Carter *et al.*, (2022). For grey seal the maximum foraging range has been identified as 448 km and for the harbour seal, 273 km.

## Long distance foraging seabirds

For long-distance foraging seabirds, the mean maximum foraging distances as expressed in Woodward *et al.* (2019) has been used as a scoping criterion. The 'mean maximum' foraging distances are defined as the maximum range reported by a series of individual studies, averaged across those studies. JNCC advice on the English Marine Plan HRAs was that the mean maximum foraging range plus one standard deviation should be applied. The mean maximum foraging distances plus one standard deviation are as follows:

- Fulmar (*Fulmarus glacialis*): 1,200 km;
- Manx shearwater (*Puffinus puffinus*): 2,366 km;
- Gannet (*Morus bassanus*): 509 km;
- Storm petrel (*Hydrobates pelagicus*): 336 km;
- Lesser black-backed gull (*Larus fuscus*): 236 km;
- Puffin (*Fratercula arctica*): 265 km;
- Black-legged kittiwake (*Rissa tridactyla*): 300.6 km;
- Great skua (*Stercorarius skua*): 931.2 km; and
- Razorbill (*Alca torda*): 122.2 km[9].

For each scheme in this assessment, European sites were scoped into the HRA if at least one of these species were among the interest features of the site and that scheme lay within the mean maximum foraging distance for that species. The decision to scope a European

[9] In consultation over this HRA JNCC advised that breeding season foraging ranges for razorbill are those within Appendix 1 of Woodward et al 2019 which excludes data from Fair Isle where foraging range may have been unusually high as a result of reduced prey availability during the study year. Therefore, the foraging range to use for razorbill is 73.8km + 48.4km = 122.2 km.

site into the HRA was based on the bird with the greatest mean maximum foraging distance. It should be noted that all sites within 100 km of a scheme would automatically be scoped into the assessment.

Although this process means that SPA/Ramsar sites up to 2,366 km from a scheme could be scoped into the HRA, this is tempered by consideration of the fact that these species generally do not travel for long distances over land in order to reach their foraging areas. For consistency with the English and Welsh Marine Plan HRAs 'Long distances' has been defined as 50 km or more. Therefore, any SPA/Ramsar site that had more than 50 km of land intervening between it and the nearest corridor, and which did not lie within the mean maximum foraging distance to the closest scheme if tracing a pathway around the coast, would be screened out even if it was designated for one of the six long distance foraging bird species.

# Terrestrial Fauna (Other than Birds)

## Bats

The area of greatest bat activity surrounding a roost is defined as the Core Sustenance Zone (CSZ) (BCT, 2020). This term refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost. The largest CSZ is generally that for greater horseshoe bat. This bat species uses commuting corridors along linear landscape features and forages in permanent pasture and woodland. The Bat Conservation Trust identifies a weighted average CSZ of 3 km for greater horseshoe bats (Schofield, 2008) based on weighted averages from four studies. However, radio-tracking research on greater horseshoe bats has shown that they make longer foraging trips foraging from their roost sites of up to 9-10 km from their roost (Billington, 2008 & 2009) and the West of England LTP4 HRA cites studies (Billington, 2003) that identify that greater horseshoe bats have been shown to have a maximum home range of up to 8 km from a roost.

In consultation over the HRA Evidence Gathering Report (methodology) for the Strategic Spatial Energy Plan (SSEP) that is being prepared by NESO, Natural Resources Wales suggested a 12 km zone of influence around sites designated for greater horseshoe bats and a 20 km zone of influence for barbastelle bat. A 12 km zone of influence would only result in one more European site being screened into assessment for greater horseshoe bat (Pembrokeshire Bat Sites and Bosherston Lakes SAC), which lies 9 km from the marine part of study corridor PDA1_to_Llandyfaelog. The SAC lies well over 12 km from the landfall of that corridor. No sites designated for barbastelle bat would be screened in, with the nearest barbastelle bat site to a study corridor being North Pembrokeshire Woodlands SAC located 40 km north-west of corridor PDA1_to_Llandyfaelog.

On balance an 8 km zone is considered reasonable to define the area of greatest importance for a greater horseshoe colony, being precautionary (compared to the CSZ approach) but without trying to encapsulate every area that might be visited by greater horseshoe bats associated with a given SAC. The use of such a zone would not mean that greater horseshoe bat habitat more than 8 km from the SAC (or from an important satellite roost) did not also need preserving, but more distant habitat could be dealt with as part of

the Ecological Impact Assessment process for any planning application since bats are protected species and material considerations in the planning process wherever they are found. As such, 8 km has been used for this screening exercise. This is also consistent with the original HNDFUE HRA undertaken in early 2024.

### Otter

According to Vincent Wildlife Trust, otter (*Lutra lutra*) has a foraging range of up to 20 km (Vincent Wildlife Trust, 2024). This does depend on the environment in which the animal is living. For example, guidance from Natural Resources Wales indicates male otters can have home ranges of up to 40 km along a river (Natural Resources Wales, 2010). In coastal environments otters do tend to have much smaller home ranges and travel shorter distances (2 km according to Vincent Wildlife Trust). Given that all the study corridors in the plan have landfalls in coastal environments, 20 km is considered a suitably precautionary distance for screening.

### Great crested newt

Great crested newts (*Triturus cristatus*) often depend on habitat up to 500 metres (m) from their breeding ponds to forage, and to over-winter.

## Terrestrial birds

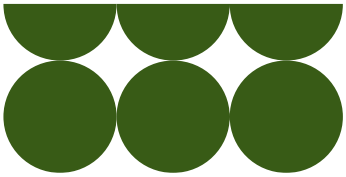
Two sources of guidance have been referenced regarding distances to be used for terrestrial birds (i.e. birds other than seabirds, including birds of prey and waterfowl and waders). The first of these is unpublished guidance on Impact Risk Zones (IRZ) for birds for each Sites of Special Scientific Interest (SSSI) and general guidance that underlies those zones (Natural England, 2019).

This identifies that different groups of birds have different distances that they travel to forage from their nesting or roosting sites. The species with the largest distance are given as wintering lapwing, golden plover, pink-footed goose and barnacle goose with a maximum IRZ of 20 km.

The second source of guidance is the Scottish Natural Heritage (now NatureScot) report Assessing Connectivity with Special Protection Areas (Scottish Natural Heritage, 2016). This goes into more detail than the Natural England advice, on birds of prey in particular. In general, the distances cited are greater than those for the same species in Natural England guidance (possibly due to larger foraging ranges) but with the exception of osprey, all species have foraging distances of less than 20 km. Therefore, for the purposes of broad screening and considering impacts on a population are more likely from effects on functionally linked land closer to the nest site, a distance of 20 km has been used for screening.

## Approach to other terrestrial sites

For heathland breeding birds such as nightjar and woodlark a 2 km IRZ around the SSSI boundary is identified for ‘pylons and overhead cables’ in the aforementioned Natural England guidance. These same zones have therefore been used in screening in onshore European sites that are not captured by the other categories. While the design assumption



for the plan has been for cabling up to the relevant substation (and thus study corridor end point) to be buried, the HRA has allowed for the possibility of new sections of overhead line as a precaution, particularly if connecting from the substation and/or converter station into the onshore network.

# Specific impact pathways

In addition to distance criteria to define zones of influence for particular species groups for the purposes of HRA screening, the following section sets out the screening distances which have been applied to certain marine impact pathways.

## Accounting for Hydrodynamics

It is important to recognise that activities within the geographic areas under review could indirectly affect habitats and species just outside their boundaries, not only through long-distance pathways such as noise, but because the sea is not a static environment but consists of moving packages of water. As a general rule, impacts from hydrodynamic changes (i.e. erosion), sediment disturbance and sediment transport at any designated site that lies more than the distance of one tidal ellipse[10] away from a scheme boundary are unlikely to arise in practice[11]. This is based on evidence from plume studies that even fine particles mobilised from the seabed settle out again to a large extent within the distance of one tidal excursion and considered a sufficiently precautionary buffer (Hewageegana & Canestrelli, 2021). The typical maximum distance over which there could be a potential indirect effect, as defined by an average tidal ellipse, is around 10-17 km, but this can be greater. In the HRA this distance has therefore been used as an indicator of potential water quality/sediment impacts outside each scheme area.

For the relevant impact pathways, such as temporary disturbance as a result of increased SSC and sediment deposition and changes in water quality, sites have been screened in where they fall within this 17 km tidal ellipse. This is reflective of the potential distance to which disturbed sediment particles could be dispersed by water movements. Any rare occurrences of plumes beyond 17 km would be identified at the project level, when benthic survey data and physical process are considered for each cable route.

## Electromagnetic Fields (EMF)

During cable operation, high voltage cables emit EMF, which have the potential to affect benthic receptors, and sensitive fish species (e.g. elasmobranchs, eels, and salmonids) in the immediate vicinity (typically tens of metres (Orpwood *et al.*, 2015; NIRAS, 2016)) of the cables. Some cable designs include a metallic outer sheath so the cables will produce no

[10] Elliptical packages of water will move to and from over one tidal cycle, typically along a dominant axis, returning to almost the same position. These are 'tidal ellipses'.

[11] In nearshore environments, the definition of Zone of Influence may vary depending on regional guidance. For example, NRW GN41 advises that littoral sediment cell or sub-cell boundaries may also inform the maximum extent of potential changes to nearby coastlines. Project-level assessments should have regard to the relevant national guidance applicable to the scheme location.

external electrical field, though there is still potential for induced electrical fields via the movement of the sea through the cable's magnetic field.

How the cables are laid will also influence the extent of EMF effects. Cables can often be laid singularly. Where multiple cables are required, these can be laid in two separate parallel trenches (unbundled), or in a single trench with the cables bundled together. In the bundled configuration, the interactions between the magnetic fields associated with the opposing poles results in cancellation, and a reduced overall field strength. Where the cables are separately laid, the distance between the two poles reduces the degree of field cancellation, and as such the resulting fields are of greater strength.

Whilst EMF will be emitted whenever the cable is active, and is therefore a permanent effect during cable operation, the spatial extent is very small, and effects are restricted to small short-term behavioural responses in species sensitive to EMF.

Marine mammals are highly migratory and may be capable of detecting the earth's magnetic field, likely using it for navigation (Walker *et al.*, 2003). Therefore, cetaceans may be able to detect EMF from cables (Normandeau, *et al.*, 2011). However, the observed effects from EMF emissions to marine mammals vary by emission magnitude and are largely constrained to behavioural responses, such as a temporary change in swim direction (Normandeau, *et al.*, 2011). Given that any emissions will be localised to the water column immediately surrounding the cable, and that marine mammal species are generally highly mobile, and thus capable of avoiding the area, any effect of EMF from cables on marine mammals is likely to be negligible. Therefore, the effect of EMF on marine mammals has been scoped out of further assessment.

### Thermal Emissions

Increased sediment temperature has the potential to affect infaunal species and assemblages directly. However, whilst the sediment surrounding the cable may be heated, there is negligible capability to heat the overlying water column due to the very high heat capacity of water (OSPAR, 2023). As such, the overall impact range is considered to be restricted to the immediate vicinity of the cable, due to the relatively discrete area over which this impact pathway will affect benthic habitats and species. Therefore, the impact of thermal emissions on migratory fish, marine mammals have not been considered further.

### Underwater Sound

Several project activities will generate underwater sound, such as pre-lay geophysical or geotechnical surveys, clearance of obstacles and/or debris, sand wave sweeping, cable trenching, cable protection placement, cable removal, and vessel operation. Underwater sound can be either impulsive or continuous (non-impulsive) in nature; both will occur during all phases of the projects. Impulsive sounds are produced by geophysical survey equipment and continuous sounds come from vessels, cable clearance, and installation activities.

These activities have the potential to impact marine fauna, particularly where they operate at frequencies within the hearing ranges of relevant organisms. Those which produce impulsive sounds (e.g. geophysical surveys) have the greatest potential to impact fauna such as marine mammals, fish, shellfish, and benthic organisms. Project activities that have

the greatest potential to impact marine mammals, fish, shellfish, and or benthic species include sub-bottom profiling (SBP), ultra-short baseline use (USBL), and use of project vessels during cable installation activities. Both SBP and USBL have the potential to result in injury or behavioural disturbance. Sound source levels associated with SBP and USBL can vary and thus so can distances at which species are subject to injury or disturbance. Injury or behavioural disturbance to fish can occur within hundreds of metres (Popper *et al.*, 2014). For marine mammals, in the absence of any project-specific noise modelling the SNCB guidance recommends the use of effective deterrent ranges (EDR; the range up to which an area can be considered 'disturbed') which is 5 km for SBP (JNCC, 2020).

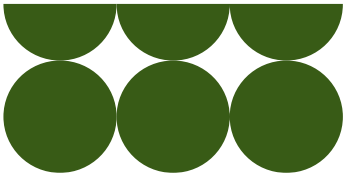
Vessels produce continuous, non-impulsive underwater sound. The specific number of vessels to be used for each development is currently unknown. However, the increase in vessel movements during the installation works generally involves a small number of vessels, which are generally transient along the marine installation corridor. This small number of additional vessels will not result in a significant increase in vessel movements, particularly when compared to the high number of vessels present in UK waters year-round, as shown by AIS Marine Vessel Traffic Data (ABPmer, 2017a). Therefore, this will not result in a significant increase in ambient vessel sound or a significant impact on marine mammals or fish. Vessel sound has, therefore, been screened out of further consideration for underwater sound.

# 4. Test of LSE

Identify all European sites within the identified screening distances of corridors

Screening for Potential Impact of Each Corridor on European sites





This section of the report sets out the initial precautionary test of likely significant effects, using the distance criteria discussed in the methodology. The detailed assessment is presented in **Appendix A**. This part of the report presents a summary.

# Identify all European sites within the identified screening distances of corridors

**Appendix A** and **Appendix B** provide details of all European sites and Ramsar sites assessed as part of this HRA. Sites are screened for LSEs and the results of this screening exercise is documented in within this Section.

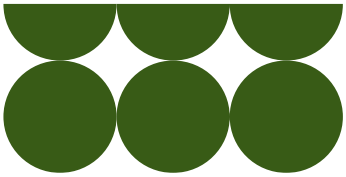
# Screening for Potential Impact of Each Corridor on European sites

This section examines the conservation objectives of each European site potentially affected by the corridors before considering the corridors themselves and the changes that they may cause which may be relevant to European sites.

Each corridor has been reviewed against the sites which are relevant to it (based on distance on qualifying criteria). Sites are screened in if corridors are capable of significantly affecting protected features, or ecological or geomorphological processes of the European site. These corridors and European sites are carried forward to Appropriate Assessment. Due to the number of European sites involved, the screening tables are presented in a separate Appendices document to this report.

For each study corridor two tables are provided in **Appendix A**. The first table for each study corridor identifies potential impact pathways for each European site within 100 km of the corridor. The second table for each study corridor identifies European sites designated for long-distance foraging seabirds with a potential impact pathway (effects on foraging resources) which extend to more than 100 km from the relevant corridor. This is in line with the mean maximum foraging distances plus one standard deviation mentioned in the methodology. Additionally, **Appendix B** provides the threats and pressures, and links to the conservation objectives for each European site screened in for assessment.

In summary, European sites have been included for initial analysis and screening for all corridors where:

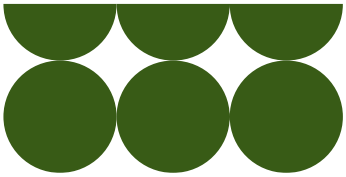


- The site is within 100 km of the corridor at its closest point. The decision whether to screen in or out is then based upon further information for particular species groups over their general zones of influence or the distances they typically travel from their roosting or nesting places.
- The site is an SPA beyond 100 km from the corridor if it is designated for the following species, lies within the distances identified for one or more species and is not separated from the corridor by more than 50 km of landmass measured as a straight-line distance. Sites are screened based on the relvant foraging disance of the designated features, as follows:
    - Fulmar (*F. glacialis*): 1,200 km;
    - Manx shearwater (*P. puffinus*): 2,366 km;
    - Gannet (*M. bassanus*): 509 km;
    - Storm petrel (*H. pelagicus*): 336 km;
    - Lesser black-backed gull (*L. fuscus*): 236 km;
    - Puffin (*F. arctica*): 265 km;
    - Black-legged kittiwake (*R. tridactyla*): 300.6 km;
    - Great skua (*S. skua*): 931.2 km; and
    - Razorbill (*A. torda*): 122.2 km.
- The site is located within the same MMMU or SMU (IAMMWG, 2023; SCOS, 2022), and designated for one or more of the following species:
    - Harbour seal (*P. vitulina*);
    - Grey seal (*H. grypus*);
    - Harbour porpoise (*P. phocoena*); and
    - Bottlenose dolphin (*T. truncatus*).

Approximately 650 European/Ramsar sites were reviewed during the screening exercise in relation to 53 planned study corridors.

Within that initial filter of the 100 km distance criterion, sites have been dismissed from consideration during this screening stage without any further need for analysis where one of the following is true:

- The site is greater than 2 km away from the corridor (including landfall), is not designated for any marine features or any species of long-distance foraging seabird, and falls outside the following distances:
    - Has no SACs designated for great crested newts within 500 m;
    - Has no SACs designated for bats within 8 km;



- Has no SPAs designated for otter, terrestrial birds of prey, waterfowl or waders within 20 km; and/or
- Has no SPAs designated for seabirds within 100 km.

In practice, this meant that, rather than use the basic screening distance of 100 km as for marine and coastal sites, terrestrial sites that are designated for habitats or animals of low mobility (e.g. great crested newts or stag beetle) were dismissed if they were located more than 2 km from a given corridor given the very low likelihood that electricity infrastructure would have any effect on such sites at a greater distance.

Sites were also screened out if they are:

- Greater than 20 km away from the corridor, is not designated for any species of long-distance foraging seabird, has no other seabirds listed as qualifying species and is not designated for any marine mammals;
- Greater than 100 km away from the corridor is not qualified for any species of long-distance foraging seabird listed above and is not designated for any marine mammals;
- Is a marine or coastal site that is greater than one tidal ellipse (typically 10-17 km) away from the corridor and does not meet any of the other criteria for screening in a site;
- Is a marine or coastal site that does not overlap with the corridor or does not contain fish or benthic qualifying features which could be sensitive to EMF or thermal emissions and does not meet any of the other criteria for screening in a site; and/or
- Is a marine or coastal site greater than 5 km away from the corridor or does not contain qualifying fish or marine mammal species which could be sensitive to harm or disturbance by underwater sound sources and does not meet any of the other criteria for screening in a site.

Note that harbour seal and grey seal have maximum foraging ranges of 273 km and 448 km respectively, with the majority foraging within 60 km (Carter *et al.*, 2022). Sites designated for these seals that are located within the same SMU (SCOS, 2022) as the study corridor have been screened in at this stage.

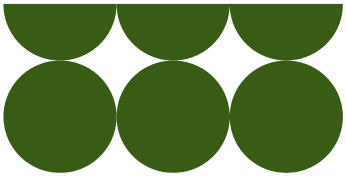
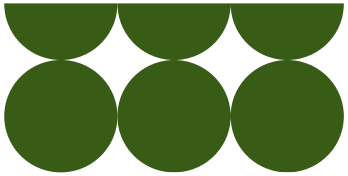


**Table** 1 below summarises the typical screening distances associated with the impact pathways considered. This table also links the impact pathways considered within the assessment with pressures detailed in the JNCC pressure-activities database (PAD) (JNCC, 2022). Natural England's Supplementary Advice on Conservation Objectives (SACO) and (for marine sites) JNCC's Advice on Operations (AOO) within Offshore MPAs as they relate to cables have also been consulted. Since SACOs are tailored to individual European sites it is not feasible to discuss them in detail in this HRA report given the number of European sites involved. Note that there are some impact pathways in **Table 1** that are not within the JNCC PADs database. In these cases, the relevant cell in the third column has 'N/A' as the entry.

Feature condition data are not available for terrestrial sites, while for many coastal sites in England the 'condition of marine features' is given as 'not assessed' on the Natural England website. Therefore, this information is not consistently available and has been omitted from Table 1 and Appendix B. The omission does not affect the assessment because as a precaution, the condition of European site features has not been used as a basis for determining either no likely significant effect or no adverse effect on integrity (i.e. the existence of an impact pathway has been sufficient to screen a European site in for AA, even if the features are in favourable condition).



## Table 1: Summary of impact pathways, typical screening distances and pressures used to inform the plan level HRA

| Phases of Development | Impact Pathway | Pressures from PAD (JNCC 2022) and Natural England Advice on Operations relating to cables | Receptor group | Typical Screening distances |
|---|---|---|---|---|
| Construction, Maintenance, and Decommissioning | **Temporary physical disturbance of subtidal and/or intertidal habitats** | • Abrasion/disturbance of the substrate on the surface of the seabed;<br>• Changes to morphology (e.g. during sandwave clearance*;<br>• Changes to bedload sediment transport due to clearing of sedimentary seabed features or presence of rock protection*;<br>• Habitat structure changes - removal of substratum (extraction); and<br>• Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion. | Marine subtidal/intertidal habitats | The footprint and immediate vicinity of the works |
| Construction, Operation and Maintenance | **Permanent loss of seabed or intertidal habitats** | • Physical change (to another seabed type); and<br>• Physical change (to another sediment type).<br>• Emergence regime changes, including tidal level change considerations.<br>• Wave exposure changes.<br>• Permanent physical changes to water flow ad sediment regimes during operation phase due to ongoing hydro- | Marine subtidal/intertidal habitats | The footprint and immediate vicinity of any cable protection |

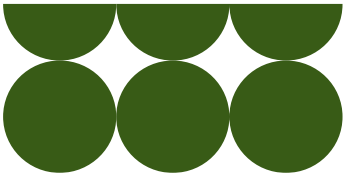
| Phases of Development | Impact Pathway | Pressures from PAD (JNCC 2022) and Natural England Advice on Operations relating to cables | Receptor group | Typical Screening distances |
|---|---|---|---|---|
| | | and sediment dynamics around hard rock protection * | | |
| Construction, Maintenance, and Decommissioning | **Temporary disturbance as a result of increased SSC and sediment deposition** | • Changes in suspended solids (water clarity);<br>• Deoxygenation;<br>• Smothering and siltation rate changes (Heavy) (also has the potential to be a permanent impact depending on rate) ;<br>• Smothering and siltation rate changes (Light); and<br>• Water flow (tidal current) changes, including sediment transport considerations. | All marine receptors | <17 km |
| Construction, Maintenance, and Decommissioning | **Changes in water quality** | • Hydrocarbon & PAH contamination;<br>• Litter;<br>• Nutrient enrichment;<br>• Synthetic compound contamination;<br>• Transition elements & organo-metal contamination;<br>• Introduction of other substances (solid, liquid or gas) | All marine receptors | <17 km |
| Construction and Maintenance | **Introduction of Invasive Non-Native Species (INNS) to subtidal benthic habitats and species** | • Introduction or spread of invasive non-indigenous species | Marine subtidal/intertidal habitats<br><br>Terrestrial habitats | The footprint and immediate vicinity of any the works and any cable protection |

| Phases of Development | Impact Pathway | Pressures from PAD (JNCC 2022) and Natural England Advice on Operations relating to cables | Receptor group | Typical Screening distances |
|---|---|---|---|---|
| Operation | **EMF impacts** | • Electromagnetic changes. | Marine subtidal habitats and fish and shellfish | The immediate vicinity of the cable |
| Operation | **Potential effects due to subsea cable thermal emissions** | • Temperature increase. | Marine subtidal habitats | The immediate vicinity of the cable |
| Construction, Maintenance, and Decommissioning | **Impacts to marine mammals and fish from underwater sound** | • Underwater noise changes; and<br>• Vibration. | Fish and shellfish and marine mammals | The footprint and immediate vicinity of any the works and any cable protection.<br><br>Screening distance also considers the Marine Mammal Management Units (MMMU) or Seal Management Units (SMU) for individual species |
| Construction and Maintenance | **Barriers to migration** | • Barrier to species movement | Fish and shellfish | Fish migration zones as per Figure 7 of the HRA, refined used a 100 km distance |
| Construction and Maintenance | **Changes in prey availability** | N/A | Marine mammals, seabirds, and waders | The footprint and immediate vicinity of any the works and any cable protection.<br><br>Overall screening distance dictated by overlap with individual species' foraging range<br><br>Screening distance also considers the Marine Mammal Management Units (MMMU) or Seal Management Units (SMU) for individual species |

| Phases of Development | Impact Pathway | Pressures from PAD (JNCC 2022) and Natural England Advice on Operations relating to cables | Receptor group | Typical Screening distances |
|---|---|---|---|---|
| Construction, Maintenance, and Decommissioning | **Collision risk with vessels** | • Collision BELOW water with static or moving objects not naturally found in the marine environment (e.g., boats, machinery, and structures). | Marine mammals | The immediate vicinity of project vessels<br><br>Screening distance also considers the Marine Mammal Management Units (MMMU) or Seal Management Units (SMU) for individual species |
| Construction, Maintenance, and Decommissioning | **Airborne sound and visual disturbance to marine mammals and seabirds** | • Above water noise;<br>• Introduction of light; and<br>• Visual disturbance. | Seals and seabirds | ≤1.5 km seals<br><br>≤4 km seabirds |
| Construction, Maintenance, and Decommissioning | **Noise and visual impacts to birds from landfall/onshore works** | N/A | All ornithological receptors | The footprint and immediate vicinity of any the works and any cable protection.<br><br>Overall screening distance dictated by overlap with individual species' foraging range |
| Construction, Maintenance, and Decommissioning | **Risk of bird strike from onshore overhead line** | • Collision ABOVE water with static or moving objects not naturally found in the marine environment (e.g., boats, machinery, and structures). | All ornithological receptors | The footprint and immediate vicinity of any the works and any cable protection.<br><br>Overall screening distance dictated by overlap with individual species' foraging range |
| Construction, Maintenance, and Decommissioning | **Temporary or permanent loss or removal of terrestrial habitats** | • Physical loss (to land or freshwater habitat). | Terrestrial habitats | The footprint and immediate vicinity of the works |

| Phases of Development | Impact Pathway | Pressures from PAD (JNCC 2022) and Natural England Advice on Operations relating to cables | Receptor group | Typical Screening distances |
|---|---|---|---|---|
| Construction, Maintenance, and Decommissioning | **Terrestrial functionally linked habitat impacts** | N/A | Terrestrial habitats and species | The footprint and immediate vicinity of the works<br><br>Overall screening distance dictated by overlap with individual species' foraging range |
| Maintenance | **Maintenance activities and cable repair** | • Various | All ecological receptors | Various |

***Not possible to assess at this level due to a lack of hydrodynamic modelling**



An initial screening exercise was undertaken for HND and HNDFUE corridors in 2023. However, that excluded sections of corridor in Scottish Waters and also excluded INTOG and Celtic Sea corridors. In addition, some of the original HND and HNDFUE corridors have been refined during 2024. Therefore, the LSE exercise has been revisited for this report. A summary of the Test of LSE is provided below, summarised by impact pathway. To keep the table manageable individual interest features have not been included in this table. However, **Appendix A** presents a table for each corridor, identifying the qualifying features of each European site, and providing the reasons for screening the site into the Appropriate Assessment. The information to support the Appropriate Assessment is provided in **Section 5**.

Those European sites screened in for each corridor will be discussed in the Appropriate Assessment for each relevant impact pathway and assessed further for whether an actual AEoSI is likely to occur. Sites carried forward to appropriate assessment are summarised in **Table 2**. Note, however, that being screened in does not mean that an AEoSI is expected (even in the absence of mitigation), it simply means that further examination of the plan proposals and the linkages to the European site are required before a conclusion is reached. It is expected that during the Appropriate Assessment a conclusion of no AEoSI is likely to be possible for a number of screened in sites, even in the absence of mitigation.

## Table 2: Summary of sites screened into Appropriate Assessment

| Pathway | Number of European Sites screened into the AA |
|---|---|
| Temporary physical disturbance of subtidal and/or intertidal habitats | 17 |
| Permanent loss of seabed or intertidal habitats | 7 |
| Temporary disturbance as a result of increased SSC and sediment deposition | 73 |
| Changes in water quality | 76 |
| Introduction of INNS to subtidal benthic habitats and species | 8 |
| EMF impacts | 8 |
| Potential effects due to subsea cable thermal emissions | 8 |
| Impacts to marine mammals and fish from underwater sound | 37 |
| Barriers to migration | 47 |
| Changes in prey availability | 186 |
| Collision risk with vessels | 32 |
| Airborne sound and visual disturbance to marine mammals and seabirds | 103 |
| Noise and visual impacts to birds from landfall/onshore works | 9 |

| Pathway | Number of European Sites screened into the AA |
|---|---|
| Risk of bird strike from onshore overhead line | 146 |
| Temporary or permanent loss or removal of terrestrial habitats | 27 |
| Terrestrial functionally linked habitat impacts | 57 |
| Maintenance activities and cable repair | 0 |

# 5. Information to Inform Appropriate Assessment

Temporary physical disturbance of subtidal and/or intertidal habitats

Permanent loss of seabed or intertidal habitats

Temporary disturbance as a result of increased SSC and sediment deposition

Changes in water quality

Introduction of Invasive Non-Native Species (INNS) subtidal benthic habitats and species

Electromagnetic field (EMF) impacts

Potential effects due to subsea cable thermal emissions

Disturbance to marine mammals and fish from underwater sound

Barriers to migration – migratory fish

Changes in prey availability

Collision risk with vessels

Airborne sound and visual disturbance to marine mammals and seabirds

Noise and visual impacts to birds from landfall/onshore works

Risk of bird strike from onshore overhead line

Temporary or permanent loss or removal of terrestrial habitats

Terrestrial functionally linked habitat impacts

Maintenance activities and cable repair



An Appropriate Assessment of the implications of any development consent must be made by the relevant competent authority if a project is anticipated to have an LSE on the conservation objectives of a European site. Information to support such an assessment is provided in this section. **For the appropriate assessment tables, green means no adverse effect on integrity is expected even without mitigation, orange highlighting indicates no adverse effect on integrity is expected provided mitigation (as discussed in the relevant judgment and section) is provided, and red means an adverse effect on integrity cannot be dismissed even with mitigation.**[12]

# Temporary physical disturbance of subtidal and/or intertidal habitats

Installation activities associated with route preparation and cable installation can lead to direct physical disturbance of substrate, which may lead to temporary disturbance and/or loss of benthic habitats and species both within the footprint and in the immediate vicinity of the works. Sensitivity to physical disturbance varies between receptor: for mobile receptors displacement, physiological or morphological damage may occur; whilst for sedentary or less mobile receptors, the likely impacts are physiological or morphological damage and mortality.

There are a number of activities associated with the installation phase of subsea cables that will temporarily disturb seabed habitats, resulting in short term physical disturbance to, and temporary loss of seabed habitats. In some instances, physical damage to less mobile benthic species, such as bivalves and other molluscs may also occur. Temporary disturbance, as a result of cable installation activities, will occur along the entire route for each cable.

In addition to direct cable installation activities, temporary seabed disturbance may also arise from the use of construction vessels (e.g. jack-up vessels or anchored vessels), which can create localised seabed depressions or anchor scars. The extent and persistence of such features are dependent on vessel type, anchoring strategy, sediment characteristics and hydrodynamic conditions, all of which are unknown at this strategic stage. These effects are therefore considered to be highly site and method specific and will be subject to detailed assessment and, where necessary, mitigation at project level once construction methodologies and sensitive habitat locations are defined.

Sensitivity to physical disturbance varies between habitats and species; it depends upon the stability of the habitat and its resilience to disturbance, and the vulnerability of an individual species to mechanical disturbance. For example, mobile sands, or habitats in

[12] When selecting appropriate assessment ratings, consideration was given to those in the Niras (2022) report but have been updated to reflect project-specific considerations, industry best practice, and professional judgment where required.

shallow water where there is significant wave and tidal energy, are considered to have greater capacity to accommodate physical disturbance, greater recoverability, and their associated communities are expected to be relatively tolerant of disturbance.

The magnitude of disturbance caused to marine habitats by the installation of cables is dependent on the methods used which are unknown at this time. In spite of this, mobile species, can avoid installation activities. However, most animals will be sediment dwelling and will be disturbed as those sediments are typically ploughed or jetted aside to an adjacent location. As sediments are displaced and backfilled there will be some mortality of larger and less mobile species. However, for many species, displacement will have only a temporary impact, and fauna will be able to redistribute within the sediment once the installation spread has moved away. Ultimately, the recovery of habitats is site and installation method specific but expected to be relatively rapid in the majority of circumstances i.e. over several years; particularly in shallower depths and areas with mobile sediments/higher sediment supply (Kraus and Carter, 2018). The assessment of this impact pathway is presented in **Table 3**.

## Mitigation

The following measures have the potential to avoid and/or reduce the impact of temporary physical disturbance on marine receptors:

- Raise the priority of environmental considerations to an equal footing with other, more-traditional considerations at this strategic level, such as avoiding designated sites, and the need to cross third-party infrastructure, as far as possible;
- Detailed route development and micro-routeing within the study corridor, following best practice guidance (JNCC & Natural England, 2022), and informed by pre-installation evaluation of site-specific survey data to avoid or minimise localised engineering and environmental constraints; including minimising the footprint as much as possible, and targeting seabed habitats that are known for quicker recovery times, where practicable;
- A vehicle management plan, which identifies sensitive habitats and adheres to best practice to avoid damage to these. For example, identifying vehicle routes, briefing staff on site sensitivities, and identifying pollution control measures;
- The specific locations where the cable will land have not been shown in detail. When the specific location has been decided sediment samples should be taken in the location of any potential sediment disturbance or cable burial. Survey is not mitigation but will inform any detailed measures in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar;
- Consideration of the cable trenching method with the smallest Zone of Influence (ZoI); and
- Consideration of the requirement and extent of for pre-lay grapnel runs and sand wave lowering.

## Table 3: Temporary physical disturbance of subtidal and/or intertidal habitats

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | These sites were screened in as they are designated for intertidal and subtidal benthic features and the associated study corridors run directly through their boundaries.<br>Further consideration of the project design for the planning application, installation and mitigation measures will be required.<br>Should an alternative route not be available to avoid adverse effects on the respective qualifying features, the proposed routes will likely be required to proceed to derogation. The potential for this is discussed further below. |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | |
| R4_3_to_Weston_Marsh | Inner Dowsing, Race Bank and North Ridge SAC | Within the HND corridor | |
| | The Wash and North Norfolk Coast SAC | Within the HND corridor | |
| R4_4_to_Bodelwyddan | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | |
| PA_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| R4_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| R4_2_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor | |
| SW_E2a_2_to_Near Richborough | Thanet Coast SAC | Within the HNDFUE corridor | |
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| PDA2_to_South_Wales_Connection_Node | Kenfig/Cynffig SAC | Within the Celtic Sea corridor | |
| SW_E1a_to_Hawthorn Pit | N/A | N/A | For these study corridors, no European sites have been screened into the assessment through the potential impact of |
| SW_NE7_To_Peterhead | N/A | N/A | |
| SW_NE4_to_New Deer | N/A | N/A | |
| SW_E1a_to_SW_e1b | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_Fiddes | N/A | N/A | physical disturbance of subtidal and/or intertidal habitats. |
| Kilmarnock South_to_Ballantrae | N/A | N/A | |
| SW_N4_to_Arnish_(Lewis) | N/A | N/A | |
| R4_6_to_Penwortham | N/A | N/A | |
| R4_5_to_Penwortham | N/A | N/A | |
| SW_N1_to_Spittal | N/A | N/A | |
| SW_E1a_to_Lincolnshire Connection Node | N/A | N/A | |
| SW_W1_to_Ballantrae | N/A | N/A | |
| Shetland_to_Blackhillock | N/A | N/A | |
| SW_E1a_to_Branxton | N/A | N/A | |
| SW_E1a_to_SW_E1c_2 | N/A | N/A | |
| SW_E1c_1_to_Lincolnshire Connection Node | N/A | N/A | |
| SW_E1c_1_to_SW_E1c_2 | N/A | N/A | |
| SW_E2a_1_to_SW_E2a_2 | N/A | N/A | |
| SW_E2a_2_to_SW_E1c_1 | N/A | N/A | |
| SW_E2b_2_to_SW_E2a_1 | N/A | N/A | |
| SW_E2b_to_Peterhead 2 | N/A | N/A | |
| SW_E2a_2_to_SW_E1c_1 | N/A | N/A | |
| SW_E2b_to_SW_E2a_1 | N/A | N/A | |
| SW_E2a_2_to_Peterhead 2 | N/A | N/A | |
| SW_E3_to_Fiddes | N/A | N/A | |
| SW_N2_to_Near Dounreay | N/A | N/A | |
| SW_N3_to_Arnish | N/A | N/A | |
| SW_NE1a_to_Shetland | N/A | N/A | |
| SW_NE1b_to_Shetland | N/A | N/A | |
| SW_NE1c_to_Shetland | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE2_to_Spittal | N/A | N/A | |
| SW_NE3_to_New Deer 2 | N/A | N/A | |
| SW_NE4_to_New Deer | N/A | N/A | |
| SW_NE6_to_Peterhead 2 | N/A | N/A | |
| SW_NE7_to_Peterhead DCSS | N/A | N/A | |
| SW_NE8_to_Peterhead 1 | N/A | N/A | |
| Aspen_to_Beech | N/A | N/A | |
| Aspen_to_Fetteresso | N/A | N/A | |
| Beech_to_Beech MPI | N/A | N/A | |
| Beech_to_Cedar | N/A | N/A | |
| Cedar_to_Aspen | N/A | N/A | |
| Cedar_to_Branxton | N/A | N/A | |
| North Connect_to_Cenos | N/A | N/A | |
| Peterhead_to_Cenos | N/A | N/A | |
| PDA3_to_Pyworthy | N/A | N/A | |

Given the potential for an AEoSI from the temporary physical disturbance of subtidal/intertidal habitats, even after mitigation, the potential requirement for corridors to rely on derogations, a more detailed assessment of each corridor is provided in **Table 4** below.

The colour categorisation in **Table 4** reflects the three levels of likelihood for derogation/compensation to be required, based on this pathway of effect:

- **Green** - with mitigation it is unlikely that the integrity of the associated sites will be undermined;
- **Yellow** - with mitigation there is a low likelihood of AEoSI. For the purposes of this plan level assessment it is therefore considered no AEoSI will arise. This will need reviewing for any planning application; and
- **Red** - AEoSI is unlikely to be avoidable at the plan level, meaning derogations would be probable.

## Table 4: Detailed consideration of AEoSI resulting from temporary physical disturbance, and likelihood that derogations would need to be invoked

| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| Ballantrae_to_Pentir | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | It may be possible to avoid this SAC with micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | It may be possible to avoid this SAC with micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. |
| R4_3_to_Weston_Marsh | Inner Dowsing, Race Bank and North Ridge SAC | This site is designated for reef and sandbanks features. With the implementation of targeted benthic survey and informed refinement of the cable route, it may be possible to micro route around Annex I habitats. This will require investigation at project level. |
| | The Wash and North Norfolk Coast SAC | It may be possible to avoid this SAC with micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. |
| R4_4_to_Bodelwyddan | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | It may be possible to avoid this SAC with micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. The route intersects Constable Bank. Therefore, the potential for |

| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| | | sandwave clearance to affect bedload transport and the wider sedimentary system also needs to be explored. |
| PA_1_to_Birkhill Wood | Dogger Bank SAC | The connection point within the European site is a wind farm the location of which is not determined by NESO and the location of which is now settled..<br>This site is designated for a sandbank feature and although any physical disturbance from cable installation will be temporary, clear mitigation commitments may be sufficient to avoid hindering the conservation objectives relating to these qualifying features. Dogger Bank SAC is in unfavourable condition and is not currently meeting its conservation objectives due to the existing pressure from anthropogenic activities taking place within the site. To determine the feasibility and effectiveness of any mitigation measures more detailed information than presently available at plan level is required. |
| R4_1_to_Birkhill Wood | Dogger Bank SAC | The connection point within the European site is a wind farm the location of which is not determined by NESO and the location of which is now settled.<br>This site is designated for a sandbank feature and although any physical disturbance from cable installation will be temporary, clear mitigation commitments may be sufficient to avoid hindering the conservation objectives relating to these qualifying features. Dogger Bank SAC is in unfavourable condition and is not currently meeting its conservation objectives due to the existing pressure from anthropogenic activities taking place within the site. To determine the feasibility and effectiveness of any mitigation measures more detailed information than presently available at plan level is required. |
| R4_2_to_Birkhill Wood | Dogger Bank SAC | The connection point within the European site is a wind farm the location of which is not determined by NESO and the location of which is now settled.. |

| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| | | This site is designated for a sandbank feature and although any physical disturbance from cable installation will be temporary, clear mitigation commitments may be sufficient to avoid hindering the conservation objectives relating to these qualifying features. Dogger Bank SAC is in unfavourable condition and is not currently meeting its conservation objectives due to the existing pressure from anthropogenic activities taking place within the site. To determine the feasibility and effectiveness of any mitigation measures more detailed information than presently available at plan level is required. |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | It may be possible to avoid this SAC with micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. |
| SW_E2a_2_to_Near Richborough | Thanet Coast SAC | This site is designated for reefs and sea cave features. However, only a small area of the corridor overlaps this site. There is, therefore, potential for the SAC to be avoided by the corridor completely, removing the need for HDD. Thus it is not considered that conservation objectives of this site will be hindered, and there will be no AEoSI. |

| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | It may be possible to avoid Annex I habitats by micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | The corridor overlaps with overlaps to a small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided |
| PDA2_to_South_Wales_Connection_Node | Kenfig/Cynffig SAC | This site is designated for dunes features. Therefore, impacts to the extent and quality of the habitat and its typical species are likely avoidable with trenchless methods, thus it is not considered that conservation objectives of this site will be hindered, and there will be no AEoSI. |

# Permanent loss of seabed or intertidal habitats

Activities associated with the installation phase of subsea cables may result in loss of intertidal or subtidal habitats. For example, there may be a requirement to use subtidal rock protection and/or concrete mattressing at points along the cable route (including nearshore and offshore areas). The exact installation methods required are not yet known for each Marine Scheme, but protection may be used to protect horizontal directional drilling (HDD) breakouts, crossings with third-party assets, cable joints, and in locations where the minimum depth of lowering (DoL) cannot be achieved.

The exact location of each cable and the extent of any required cable protection is currently unknown at this plan-level stage. Therefore, the precautionary principle must be applied, and thus, it must be assumed that there will be a moderate amount of cable protection required for each marine scheme resulting in permanent habitat loss below the footprint of hard cable protection measures that are introduced.

In addition, loss of habitats may influence the availability prey for impacting foraging species such as marine mammals and seabirds. The impact of changes in prey availability have been discussed further in the section on **changes in prey availability** later in this report.

The permanent loss of qualifying benthic features of European sites will be restricted to the individual study corridors but will likely result in at least minor overall impacts, with the potential for significant impacts to occur. Either outcome may result in AEoSI. Therefore, this requires further analysis once methods and design have been confirmed at the individual project level for each cable route. The assessment of this impact is presented in **Table 5**.

## Mitigation

The following measures have the potential to avoid and/or reduce the permanent loss of seabed or intertidal habitats:

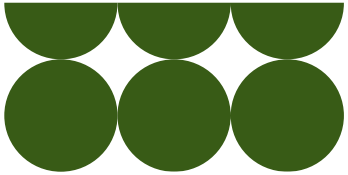
- Raise the priority of environmental considerations to an equal footing with other, more-traditional considerations at this strategic level, such as avoiding designated sites, and the need to cross third-party infrastructure, as far as possible;
- An assessment of the impacts of climate change on the exposure of the cable through a Cable Burial Risk Assessment. Ensuring that cables are buried to a sufficient depth would avoid cable exposure later and the potential need for cable protection;
- Detailed route development and micro-routeing within the study corridor, informed by pre-installation evaluation of site-specific survey data to avoid or

minimise localised engineering and environmental constraints, including minimising the footprint as much as possible; and

- Nature-inclusive design measures; in consultation on this HRA report Natural England commented that they have a current casework position and advise, until evidence demonstrates otherwise, Nature-inclusive design should not be installed within European sites. However, once the mitigation hierarchy has been applied, they agree with the use of a similar size rock to the receiving environment as set out in the cables Best Practice.

- Furthermore decommissioning needs to be considered upfront and removability of infrastructure at end of life. Where possible, cable protection materials could be selected to match the environment (e.g. when cables are installed in areas of cobbles or other natural rock features, rock of similar diameter and material as the receiving environment could be used as an alternative to artificial materials, such as concrete matressing). Consideration should also be given to whether long term impacts can be reduced though the use of removable materials.

Mitigation would need to account for any changes in physical processes and sediment transport regimes as a result of rock armour / mattress placement on the seabed. Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar.



## Table 5: Assessment of the potential for permanent loss of seabed or intertidal habitats to have an AEoSI

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | These sites were screened in as they are designated for benthic features and the associated study corridors running directly through their boundaries.<br>Further consideration of the project design for the planning application, installation and mitigation measures will be required.<br>Should an alternative route not be available to avoid adverse effects on the respective qualifying features, the proposed routes will likely be required to proceed to derogation. This is discussed further below. |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | |
| R4_3_to_Weston_Marsh | Inner Dowsing, Race Bank and North Ridge SAC | Within the HND corridor | |
| | The Wash and North Norfolk Coast SAC | Within the HND corridor | |
| R4_4_to_Bodelwyddan | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | |
| PA_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| R4_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| R4_2_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor | |
| SW_E2a_2_to_Near Richborough | Thanet Coast SAC | Within the HNDFUE corridor | |
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| PDA2_to_South_Wales_Connection_Node | Kenfig/Cynffig SAC | Within the Celtic Sea corridor | |
| SW_E1a_to_Hawthorn Pit | N/A | N/A | For these study corridors, no European sites have been screened into the assessment the potential impact of |
| SW_NE7_ To_Peterhead | N/A | N/A | |
| SW_NE4_to_New Deer | N/A | N/A | |
| SW_E1a_to_SW_e1b | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_Fiddes | N/A | N/A | permanent loss of seabed or intertidal habitats. |
| Kilmarnock South_to_Ballantrae | N/A | N/A | |
| SW_N4_to_Arnish_(Lewis) | N/A | N/A | |
| R4_6_to_Penwortham | N/A | N/A | |
| R4_5_to_Penwortham | N/A | N/A | |
| SW_N1_to_Spittal | N/A | N/A | |
| SW_E1a_to_Lincolnshire Connection Node | N/A | N/A | |
| SW_W1_to_Ballantrae | N/A | N/A | |
| Shetland_to_Blackhillock | N/A | N/A | |
| SW_E1a_to_Branxton | N/A | N/A | |
| SW_E1a_to_SW_E1c_2 | N/A | N/A | |
| SW_E1c_1_to_Lincolnshire Connection Node | N/A | N/A | |
| SW_E1c_1_to_SW_E1c_2 | N/A | N/A | |
| SW_E2a_1_to_SW_E2a_2 | N/A | N/A | |
| SW_E2a_2_to_SW_E1c_1 | N/A | N/A | |
| SW_E2b_2_to_SW_E2a_1 | N/A | N/A | |
| SW_E2b_to_Peterhead 2 | N/A | N/A | |
| SW_E2a_2_to_SW_E1c_1 | N/A | N/A | |
| SW_E2b_to_SW_E2a_1 | N/A | N/A | |
| SW_E2a_2_to_Peterhead 2 | N/A | N/A | |
| SW_E3_to_Fiddes | N/A | N/A | |
| SW_N2_to_Near Dounreay | N/A | N/A | |
| SW_N3_to_Arnish | N/A | N/A | |
| SW_NE1a_to_Shetland | N/A | N/A | |
| SW_NE1b_to_Shetland | N/A | N/A | |
| SW_NE1c_to_Shetland | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE2_to_Spittal | N/A | N/A | |
| SW_NE3_to_New Deer 2 | N/A | N/A | |
| SW_NE4_to_New Deer | N/A | N/A | |
| SW_NE6_to_Peterhead 2 | N/A | N/A | |
| SW_NE7_to_Peterhead DCSS | N/A | N/A | |
| SW_NE8_to_Peterhead 1 | N/A | N/A | |
| Aspen_to_Beech | N/A | N/A | |
| Aspen_to_Fetteresso | N/A | N/A | |
| Beech_to_Beech MPI | N/A | N/A | |
| Beech_to_Cedar | N/A | N/A | |
| Cedar_to_Aspen | N/A | N/A | |
| Cedar_to_Branxton | N/A | N/A | |
| North Connect_to_Cenos | N/A | N/A | |
| Peterhead_to_Cenos | N/A | N/A | |
| Scaraben_to_Peterhead_2 | N/A | N/A | |
| Sinclair_to_Scaraben | N/A | N/A | |
| PDA3_to_Pyworthy | N/A | N/A | |

Given the potential for AeoSI from the permanent loss of seabed or intertidal habitats, even after mitigation, the potential requirement for corridors to rely on derogations, a more detailed assessment of each corridor is provided in **Table 6** below.

The colour categorisation in **Table 6** reflects the three levels of likelihood for derogation/compensation to be required, based on this pathway of effect:

- **Green** - with mitigation it is unlikely that the integrity of the associated sites will be undermined;
- **Yellow** - with mitigation there is a low likelihood of AEoSI. For the purposes of this plan level assessment it is therefore considered no AEoSI will arise. This will need reviewing for any planning application; and
- **Red** - AEoSI is unlikely to be avoidable at the plan level, meaning derogations would be probable.

**It can be seen from Table 6 that three corridors are considered likely to need to rely on derogations. PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood, and R4_2_to_Birkhill Wood, are all related to wind farms within Dogger Bank SAC and it is impossible to connect these wind farms without entering the site. It has also been identified that corridors will cross existing cables and/or pipelines, which increases the likelihood of need for cable protection, which would ultimately lead to loss of subtidal habitats qualifying as SAC features.**

Dogger Bank SAC is in unfavourable condition and is not currently meeting its conservation objectives due to the existing pressure from anthropogenic activities taking place within the site. As discussed previously, for Dogger Bank SAC, in their Round 4 plan level HRA, The Crown Estate have proposed mitigating conditions limiting the extent of infrastructure and the provision of specific information to The Crown Estate at Project level (NIRAS, 2022). Their RIAA found that '*the predicted impacts on the sandbank feature can be mitigated, but not to levels at which an AEoSI can be discounted at this Protected Site for the Round 4 Plan alone and in-combination*'. The same conclusion has been reached in the Appropriate Assessment for The Crown Estate's Capacity Increase Programme which includes Dogger Bank D (one of the wind farms that will be served by these three new study corridors). Whilst it was recognised that mitigation could be developed with the benefit of project level information (e.g. on amount of cable protection required), mitigation was considered unlikely to reduce the impact to a level at which an adverse effect on the integrity of Dogger Bank SAC could be discounted altogether and derogations were therefore used. This plan level HRA is in agreement with that conclusion.

## Table 6: Detailed consideration of AEoSI resulting from permanent habitat loss, and likelihood that derogations would need to be invoked

| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| Ballantrae_to_Pentir | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | It may be possible to avoid this SAC with micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | It may be possible to avoid this SAC with micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. |
| R4_3_to_Weston_Marsh | Inner Dowsing, Race Bank and North Ridge SAC | This site is designated for reef and sandbanks features.<br>Currently, this design will cross approximately one cables/pipeline. Therefore, |

| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| | | the likelihood of cable protection being needed on the seabed is high. With the implementation of targeted benthic survey and informed refinement of the cable route, it may be possible to micro route around Annex I habitats. This will require investigation at project level. |
| | The Wash and North Norfolk Coast SAC | It may be possible to avoid this SAC with micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. |
| R4_4_to_Bodelwyddan | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | It may be possible to avoid this SAC with micro routing, avoiding any impact on the conservation objectives of |

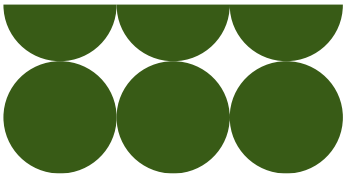
| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| | | the site. Although this will need to be explored. The route intersects Constable Bank. Therefore, the potential for sandwave clearance to affect bedload transport and the wider sedimentary system also needs to be explored. |
| PA_1_to_Birkhill Wood | Dogger Bank SAC | Currently, this design will cross approximately three cables/pipeline. Therefore, the likelihood of cable protection being needed on the seabed is high, thus losing qualifying sandbank feature of SAC.<br>The connection point within the European site is a wind farm the location of which is not determined by NESO and the location of which is now settled.. |
| R4_1_to_Birkhill Wood | Dogger Bank SAC | Currently, this design will cross approximately one cable/pipeline. Therefore, likelihood of cable protection being needed on the seabed is high, thus losing qualifying sandbank feature of SAC.<br>The connection point within the European site is a wind farm the location of which is not determined |

| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| | | by NESO and the location of which is now settled.. |
| R4_2_to_Birkhill Wood | Dogger Bank SAC | Currently, this design will cross approximately three cables/pipeline. Therefore, likelihood of cable protection being needed on the seabed is high, thus losing qualifying sandbank feature of SAC.<br>The connection point within the European site is a wind farm the location of which is not determined by NESO and the location of which is now settled.. |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | It may be possible to avoid this SAC with micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. |

| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| SW_E2a_2_to_Near Richborough | Thanet Coast SAC | This site is designated for reefs and sea cave features. However, only a small area of the corridor overlaps this site. There is, therefore, potential for the SAC to be avoided by the corridor completely, removing the need for HDD. Thus it is not considered that conservation objectives of this site will be hindered, and there will be no AEoSI. |

| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | It may be possible to avoid Annex I habitats by micro routing, avoiding any impact on the conservation objectives of the site. Although this will need to be explored. |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | The corridor overlaps with overlaps to a small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| PDA2_to_South_Wales_Connection_Node | Kenfig/Cynffig SAC | This site is designated for dunes features. Therefore, impacts to the extent and quality of the habitat and |

| Corridor name | Site screened in for this pathway | Appropriate Assessment |
|---|---|---|
| | | its typical species are likely avoidable with trenchless methods, thus it is not considered that conservation objectives of this site will be hindered, and there will be no AEoSI. |



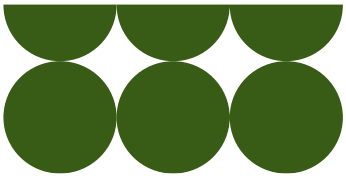
# Temporary disturbance as a result of increased SSC and sediment deposition

There are a number of activities associated with the installation phase of subsea cables that will temporarily disturb subtidal habitats, resulting in short term physical disturbance to, and temporary loss of subtidal habitats, and in some instances physical damage to less mobile benthic species such as bivalves and other molluscs. Temporary disturbance as a result of the installation phase activities will occur along the entirety of each individual cable route.

Seabed disturbance has the potential to increase Suspended Sediment Concentrations (SSC) and turbidity, creating a sediment plume in the water column that can travel away from the installation corridor before the sediment is deposited on the seabed. There are several potential effects in fish and shellfish associated with increased SSC and sediment deposition: clogging of respiratory apparatuses such as gills or feeding apparatuses, reduced feeding success of visual predators due to decreased visibility, mortality of eggs and larvae which are less tolerant to turbid conditions, and effects related to toxic conditions if sediments in suspension are contaminated (Kjelland et al., 2015). The movement and migration of fish could also be impacted by SSC (Coen 1995; Kjelland et al., 2015). Additionally, large increases in SSC and sediment deposition have the potential to smother benthic life (Pineda, *et al.*, 2017). Sessile benthic organisms are particularly at risk as many are filter feeders and increased sediment loads can clog their feeding apparatus (Pineda, *et al.*, 2017).

The largest sediment plumes and highest levels of SSC will be associated with disturbance of sediments with a high proportion of fine particulate material, such as muds and clays, that will remain in suspension longest and settle to the seabed more slowly.

The magnitude of disturbance caused to marine habitats by the installation of subsea cables is dependent on the methods used, which for the study corridors are unknown at this time. Any measurable change in SSC will typically be temporary and localised, particularly regarding coarser sediments, with finer fractions that are transported further also rapidly diluted. However, without confirmed installation methodologies, and more in-depth analysis of benthic habitats within each individual study corridor, the precautionary principle must be followed. As such, there is potential for large volumes of sediment to be transported within one tidal ellipse, up to 10–17 km from the study corridor. In addition, with some study corridors located within the boundaries of European sites, there is potential for AEoSI. The impact of sediment deposition and turbidity will decrease with distance from the source of disturbance. The greatest impact is expected within a few hundred metres from any of the proposed cables.



Calculations specific to each cable route will need to be undertaken to estimate the extent of sediment dispersion before deposition as a result of trenching activities. The results of which, will be used to inform the project specific HRAs.

Sensitivity to the impact of habitat disturbance varies between habitats and species; it depends upon the stability of the habitat and its resilience to disturbance, and the vulnerability of an individual species to mechanical disturbance. For example, mobile sands, or habitats in shallow water where there is significant wave and tidal energy, are considered to have greater capacity to accommodate physical disturbance, and their associated communities are expected to be relatively tolerant of disturbance.

Salmonids can be sensitive to increased SSC through reduced vision of prey (Abbotsford, 2021). However, due to the short-term nature of any increase in SSC and the associated deposition and smothering risks occurring during installation of the cable, it is unlikely to act as a barrier to migrating fish between marine and freshwater environments. In addition, as effects to migratory fish are not considered likely, impacts to the freshwater pearl mussel are also considered unlikely as this species is dependent on migratory fish during part of its life cycle (Skinner et al., 2003). The application of seasonal restrictions during construction can also avoid the impact entirely, should the migratory fish be qualifying features of a traversed designated site. Barriers to migration have been considered in the later section on **Barriers to Migration**.

Many crustacean species, including the edible crab and Nephrops are known to be tolerant of, and have low sensitivity to, short-term increases in turbidity and SSC. Increased turbidity can affect shellfish, for example crabs spend more time searching for prey due to decreased visual acuity (Wang N., 2021). This can lead to them exhibiting avoidance behaviour when conditions become unfavourable to increase feeding success (Neal & Wilson, 2008). Buried crustacean species including the edible crab and European lobster remain sedentary during egg-bearing, meaning they may be more sensitive to increased SSC and turbidity. During egg-bearing, avoidance of sediment disturbance may be more difficult. The eggs that are laid also require sufficient regular aeration, meaning a high level of deposition and smothering may have implications, making them likely to be highly sensitive to substantial levels of sediment deposition.

Mobile species, such as crabs, scallops and lobsters are thought to tolerate a smothering depth of 5 centimetres (cm) over a month (Neal & Wilson, 2008). They can exhibit avoidance behaviour when conditions become unfavourable by moving away from the affected area. Due to their mobility, adults are considered to have low sensitivity to increased SSC and its associated impacts. However, most animals will be sediment dwelling and will be disturbed as those sediments are ploughed or jetted aside to an adjacent location. As sediments are displaced and backfilled there will be some mortality of larger and less mobile species but for many animals, displacement will have only a temporary impact, and fauna will be able to redistribute within the sediment once the installation spread has moved away. Recovery of habitats is expected to be relatively rapid.

Furthermore, an increase in SSC may lead to impacts on marine mammal populations. However, marine mammals are frequent inhabitants of turbid environments with low visibility, and studies have indicated that they do not typically experience severe impact

from increased SSC (Marubini *et al.,* 2009; Hastie *et al.,* 2016). For most marine mammals, hearing rather than sight is their primary sensory modality. Further, seals can detect water movement with their vibrissae (Murphy *et al.,* 2017), while odontocetes (toothed whales) primarily use echolocation to navigate and forage (Madsen *et al.,* 2023). Therefore, direct impacts to marine mammals via a temporary increase in SSC are considered negligible. Indirect impacts to marine mammals such as effects on prey species have been included in the later section on **Prey Species.**

Installation activities may also have impacts on seabirds as there is potential for disturbance of key prey species via temporary increases in SSC. Therefore, as impacts are limited to those indirect effect, it is not considered that a temporary increase in SSC will have an effect on seabird features. The potential effects of such activities on prey species are assessed in the later section on **Prey Species.**

The assessment for this impact pathway is presented in **Table 7**.

## Mitigation

The following measures have the potential to avoid and/or reduce the impact of SSC and sediment deposition on marine receptors. Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar:

- Raise the priority of environmental considerations to an equal footing with other, more-traditional considerations at this strategic level, such as avoiding designated sites, and the need to cross third-party infrastructure, as far as possible;
- Detailed route development and micro-routeing within the study corridor, following best practice guidance (JNCC and Natural England, 2022), informed by pre-installation evaluation of site-specific survey data to avoid or minimise localised engineering and environmental constraints, including minimising the footprint as much as possible;
- Consideration of the cable trenching method with the smallest (ZoI); and
- Consideration of the requirement and extent of pre-lay grapnel runs and sand wave lowering.

## Table 7: Assessment of the potential for temporary disturbance as a result of increased SSC and sediment deposition to have an AEoSI

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Afon Gwyrfai a Llyn Cwellyn SAC | Within the HND corridor | These sites were screened in due to the associated study corridor running directly through or being within one tidal ellipse of its boundaries. The site's qualifying features include benthic habitats.<br>As there is potential for qualifying features within the boundaries of these sites to be impacted by increased SSC and sediment deposition, further consideration of the project design for the planning application, and mitigation measures will be required for all corridors.<br>Calculations specific to each cable route will need to be undertaken to estimate the extent of sediment dispersion before deposition as a result of trenching activities. |
| | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | |
| | Glannau Mon Cors Heli/Anglesey Coast: Saltmarsh SAC | <1 km | |
| | Luce Bay and Sands SAC | 2 km | |
| | Croker Carbonate Slabs SAC | 5 km | |
| | Glan-traeth SAC | 6 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 8 km | |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | |
| R4_3_to_Weston_Marsh | The Wash and North Norfolk Coast SAC | Within the HND corridor | |
| | Humber Estuary SAC | 13 km | |
| R4_6_to_Penwortham | Shell Flat and Lune Deep SAC | 2 km | |
| | Morecambe Bay SAC | 14 km | |
| R4_4_to_Bodelwyddan | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | |
| R4_5_to_Penwortham | Morecambe Bay SAC | 14 km | |
| PA_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| | Flamborough Head SAC | 2 km | |
| | Humber Estuary SAC | 6 km | |
| R4_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| | Flamborough Head SAC | 2 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Humber Estuary SAC | 6 km | |
| R4_2_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| | Flamborough Head SAC | 2 km | |
| | Humber Estuary SAC | 6 km | |
| SW_E1a_to_Lincolnshire Connection Node | Humber Estuary SAC | 5 km | |
| | Inner Dowsing, Race Bank and North Ridge SAC | 5 km | |
| | The Wash and North Norfolk Coast SAC | 15 km | |
| SW_W1_to_Ballantrae | Rathlin Island SAC | 12 km | |
| Shetland_to_Blackhillock | Mousa SAC | 9 km | |
| | The Vadills SAC | 13 km | |
| | Pobie Bank Reef SAC | 16 km | |
| SW_E1a_to_Branxton | Berwickshire and North Northumberland Coast SAC | 3 km | |
| | Humber Estuary SAC | 4 km | |
| | Inner Dowsing, Race Bank and North Ridge SAC | 7 km | |
| | The Wash and North Norfolk Coast SAC | 15 km | |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor | |
| | Inner Dowsing, Race Bank and North Ridge SAC | 1 km | |
| | Humber Estuary SAC | 7 km | |
| SW_E2a_2_to_Near Richborough | Thanet Coast SAC | 500 m | |
| | Dogger Bank SAC | <1 km | |
| | North Norfolk Sandbanks and Saturn Reef SAC | 3 km | |
| | Margate and Long Sands SAC | 5 km | |
| SW_NE1a_to_Shetland | Pobie Bank Reef SAC | 5 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | The Vadills SAC | 14 km | |
| | Sullom Voe SAC | 15 km | |
| SW_NE1b_to_Shetland | Pobie Bank Reef SAC | 5 km | |
| | The Vadills SAC | 14 km | |
| | Sullom Voe SAC | 15 km | |
| SW_NE1c_to_Shetland | Pobie Bank Reef SAC | <1 km | |
| | The Vadills SAC | 13 km | |
| | Sullom Voe SAC | 15 km | |
| Cedar_to_Branxton | Berwickshire and North Northumberland Coast SAC | 2 km | |
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| PDA2_to_South_Wales_Connection_Node | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | 8 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 9 km | |
| PDA3_to_Pyworthy | Braunton Burrows SAC | 4 km | |
| | Lundy SAC | 7 km | |
| Ballantrae_to_Pentir | Afon Gwyrfai a Llyn Cwellyn SAC | Within the HND corridor | These sites were screened in due to the associated study corridor being within one tidal ellipse of its boundaries. However, migratory fish are likely to actively avoid any temporary and localized sediment plumes, and thus avoid any increase in SSC, |
| R4_3_to_Weston_Marsh | Humber Estuary SAC | 13 km | |
| SW_E1a_to_Fiddes | River Dee SAC | 9 km | |
| Kilmarnock South_to_Ballantrae | River Bladnoch SAC | 15 km | |
| R4_4_to_Bodelwyddan | The Dee Estuary SAC | 9 km | |
| SW_N1_to_Spittal | River Thurso SAC | Within the HND corridor | |
| PA_1_to_Birkhill Wood | Humber Estuary SAC | 6 km | |
| R4_1_to_Birkhill Wood | Humber Estuary SAC | 6 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| R4_2_to_Birkhill Wood | Humber Estuary SAC | 6 km | including the associated sediment deposition, and smothering risks occurring during installation of the cable. Therefore, SSC is unlikely to act as a barrier to migrating fish between marine and freshwater environment.<br>Similarly, as impacts to fish migration are considered unlikely, it is not anticipated that there will be impacts on the freshwater pearl mussel that is dependent on migratory fish for part of its lifecycle.<br>Therefore, impacts to the size and distribution of populations are considered to be negligible and conservation objectives of these sites will not be hindered and thus no AEoSI has been concluded.<br><br>These sites were screened in due to the associated study corridor running within one tidal ellipse of its boundaries. However, as marine mammals are likely to actively avoid any |
| SW_E1a_to_Lincolnshire Connection Node | Humber Estuary SAC | 5 km | |
| SW_W1_to_Ballantrae | River Bladnoch SAC | 15 km | |
| Shetland_to_Blackhillock | Berriedale and Langwell Waters SAC | 15 km | |
| | River Spey SAC | Within HNDFUE corridor | |
| SW_E1c_1_to_Lincolnshire Connection Node | Humber Estuary SAC | 4 km | |
| SW_E1c_2_to_Weston Marsh | Humber Estuary SAC | 7 km | |
| SW_E3_to_Fiddes | River Dee SAC | 9 km | |
| | River South Esk SAC | 15 km | |
| SW_N2_to_Near Dounreay | River Thurso SAC | 10 km | |
| | Loch Roag Lagoons SAC | 17 km | |
| SW_N3_to_Arnish | Langavat SAC | 15 km | |
| SW_NE2_to_Spittal | River Thurso SAC | Within the HNDFUE corridor | |
| Aspen_to_Fetteresso | River South Esk SAC | 6 km | |
| | River Dee SAC | 6 km | |
| Cedar_to_Branxton | River Tweed SAC | 6 km | |
| PDA1_to_Llandyfaelog | Afon Tywi/River Tywi SAC | 4 km | |
| | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| Ballantrae_to_Pentir | North Anglesey Marine/Gogledd Môn Forol SAC | Within the HND corridor | |
| | North Channel SAC | 1 km | |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | |
| R4_3_to_Weston_Marsh | Southern North Sea SAC | Within the HND corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Humber Estuary SAC | 13 km | temporary and localized sediment plumes. Therefore, impacts to the size and distributions of populations are considered to be negligible and that conservation objectives of these site will not be hindered and thus no AEoSI has been concluded. |
| SW_N4_to_Arnish_(Lewis) | Inner Hebrides and the Minches SAC | Within the HND corridor | |
| R4_4_to_Bodelwyddan | North Anglesey Marine/Gogledd Môn Forol SAC | 11 km | |
| | The Dee Estuary SAC | 9 km | |
| PA_1_to_Birkhill Wood | Southern North Sea SAC | Within the HND corridor | |
| | Humber Estuary SAC | 6 km | |
| R4_1_to_Birkhill Wood | Southern North Sea SAC | Within the HND corridor | |
| | Humber Estuary SAC | 6 km | |
| R4_2_to_Birkhill Wood | Southern North Sea SAC | Within the HND corridor | |
| | Humber Estuary SAC | 6 km | |
| SW_E1a_to_Lincolnshire Connection Node | Southern North Sea SAC | Within the HND corridor | |
| | Humber Estuary SAC | 5 km | |
| | The Wash and North Norfolk Coast SAC | 15 km | |
| SW_W1_to_Ballantrae | Inner Hebrides and the Minches SAC | 14 km | |
| Shetland_to_Blackhillock | Moray Firth SAC | 9 km | |
| | Mousa SAC | 9 km | |
| | Yell Sound Coast SAC | 9 km | |
| SW_E1a_to_Branxton | Berwickshire and North Northumberland Coast SAC | 3 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Southern North Sea SAC | Within the HNDFUE corridor | |
| | Humber Estuary SAC | 4 km | |
| | The Wash and North Norfolk Coast SAC | 15 km | |
| SW_E1c_2_to_Weston Marsh | Southern North Sea SAC | Within the HNDFUE corridor | |
| | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor. | |
| | Humber Estuary SAC | 7 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E2a_2_to_Near Richborough | Southern North Sea SAC | Within the HNDFUE corridor | These sites were screened in due to the associated study corridor being within one tidal ellipse of its boundaries and having seabird features. However, foraging seabirds are likely to actively avoid any temporary and localized sediment plumes.<br>Therefore, impacts to the size and distribution of populations are considered to be negligible and conservation objectives of these sites will not be |
| SW_N3_to_Arnish | Inner Hebrides and the Minches SAC | Within the HNDFUE corridor | |
| SW_NE1a_to_Shetland | Yell Sound Coast SAC | 9 km | |
| SW_NE1b_to_Shetland | Yell Sound Coast SAC | 9 km | |
| SW_NE1c_to_Shetland | Yell Sound Coast SAC | 9 km | |
| PDA1_to_Llandyfaelog | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | Within the Celtic Sea corridor | |
| PDA2_to_South_Wales_Connection_Node | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | 15 km | |
| PDA3_to_Pyworthy | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| Ballantrae_to_Pentir | Anglesey Terns/Morwenoliaid Ynys Môn SPA | <1 km | |
| | Ailsa Craig SPA | 9 km | |
| | Liverpool Bay SPA | 9 km | |
| | Ynys Seiriol/Puffin Island SPA | 14 km | |
| PA_2_ to_Berwick_Bank | Northumberland Marine SPA (Including compensation area Alnmouth 2) | Within the HND corridor | |
| | Northumbria Coast SPA/Ramsar | Within the HND corridor | |
| | Coquet Island SPA | 3 km | |
| | Farne Islands SPA | 5 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 5 km | |
| R4_3_to_Weston_Marsh | Gibraltar Point SPA/Ramsar | 100m from the HND corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Greater Wash SPA | Within the HND corridor | hindered; thus no AEoSI has been concluded. |
| | The Wash SPA/Ramsar | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar | 6 km | |
| SW_E1a_to_Hawthorn Pit | Northumbria Coast SPA/Ramsar | Within the HND corridor | |
| | Coquet Island SPA | 3 km | |
| | Teesmouth and Cleveland Coast SPA/Ramsar | 7 km | |
| SW_NE7_ To_Peterhead | Troup, Pennan and Lion`s Heads SPA | 12 km | |
| | Ythan Estuary and Meikle Loch SPA/Ramsar | 12 km | |
| | Moray Firth SPA | 7 km | |
| SW_NE4_to_New Deer | Ythan Estuary and Meikle Loch SPA/Ramsar | 19 km | |
| | Troup, Pennan and Lion`s Heads SPA | 8 km | |
| SW_E1a_to_Fiddes | Fowlsheugh SPA | 2 km | |
| Kilmarnock South_to_Ballantrae | Ailsa Craig SPA | 1 km | |
| SW_N4_to_Arnish_(Lewis) | Lewis Peatlands SPA/Ramsar | Within the HND Corridor | |
| R4_6_to_Penwortham | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HND corridor | |
| | Liverpool Bay SPA | Within the HND corridor | |
| | Morecambe Bay and Duddon Estuary SPA/Ramsar | 7 km | |
| R4_4_to_Bodelwyddan | Liverpool Bay SPA | Within the HND corridor | |
| | Anglesey Terns/Morwenoliaid Ynys Môn SPA | 9 km | |
| | The Dee Estuary SPA/Ramsar | 9 km | |
| | Ynys Seiriol/Puffin Island SPA | 11 km | |
| R4_5_to_Penwortham | Liverpool Bay SPA | Within the HND corridor | |
| | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HND corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Morecambe Bay and Duddon Estuary SPA/Ramsar | 7 km | |
| SW_N1_to_Spittal | Caithness Lochs SPA/Ramsar | 1 km | |
| | Caithness and Sutherland Peatlands SPA/Ramsar | 4 km | |
| PA_1_to_Birkhill Wood | Humber Estuary SPA/Ramsar | 4 km | |
| | Flamborough & Filey Coast SPA | 5 km | |
| R4_1_to_Birkhill Wood | Greater Wash SPA | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| | Flamborough & Filey Coast SPA | 5 km | |
| R4_2_to_Birkhill Wood | Greater Wash SPA | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| | Flamborough & Filey Coast SPA | 5 km | |
| SW_E1a_to_Lincolnshire Connection Node | Greater Wash SPA | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| | Gibraltar Point SPA/Ramsar | 15 km | |
| SW_W1_to_Ballantrae | Ailsa Craig SPA | 7 km | |
| Shetland_to_Blackhillock | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Moray Firth SPA | Within the HNDFUE corridor | |
| | Noss SPA | Within the HNDFUE corridor | |
| | East Caithness Cliffs SPA | 2 km | |
| | Caithness and Sutherland Peatlands SPA/Ramsar | 8 km | |
| | Tips of Corsemaul and Tom Mor SPA | 9 km | |
| | Mousa SPA | 11 km | |
| | Sumburgh Head SPA | 11 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the HNDFUE corridor | |
| | Firth of Forth SPA/Ramsar | 6 km | |
| | Forth Islands SPA | 10 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Greater Wash SPA | Within the HNDFUE corridor | |
| | Humber Estuary SPA/Ramsar | 2 km | |
| | Gibraltar Point SPA/Ramsar | 15 km | |
| SW_E1c_2_to_Weston Marsh | Greater Wash SPA | Within the HNDFUE corridor | |
| | The Wash SPA/Ramsar | Within the HNDFUE corridor | |
| | Gibraltar Point SPA/Ramsar | 5 km | |
| | Humber Estuary SPA/Ramsar | 5 km | |
| SW_E2a_2_to_Near Richborough | Thanet Coast and Sandwich Bay SPA/Ramsar | Within the HNDFUE corridor | |
| | Outer Thames Estuary SPA | 4 km | |
| SW_E2a_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | 6 km | |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA/Ramsar | 8 km | |
| SW_E3_to_Fiddes | Fowlsheugh SPA | 3 km | |
| SW_N2_to_Near Dounreay | Caithness and Sutherland Peatlands SPA/Ramsar | Within the HNDFUE corridor | |
| | North Caithness Cliffs SPA | Within the HNDFUE corridor | |
| | Caithness Lochs SPA/Ramsar | 3 km | |
| | Cape Wrath SPA | 8 km | |
| SW_N3_to_Arnish | Lewis Peatlands SPA/Ramsar | Within the HND Corridor | |
| SW_NE1a_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Noss SPA | 5 km | |
| SW_NE1b_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Noss SPA | 7 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE1c_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Noss SPA | 9 km | |
| SW_NE2_to_Spittal | Caithness and Sutherland Peatlands SPA/Ramsar | Within HNDFUE corridor | |
| | Caithness Lochs SPA/Ramsar | Within HNDFUE corridor | |
| | Caithness Lochs SPA/Ramsar | Within HNDFUE corridor | |
| | North Caithness Cliffs SPA | 5 km | |
| | Pentland Firth Islands SPA | 14 km | |
| SW_NE3_to_New Deer 2 | Troup, Pennan and Lion's Heads SPA | 2 km | |
| | Loch of Strathbeg SPA/Ramsar | 7 km | |
| SW_NE4_to_New Deer | Moray Firth SPA | 7 km | |
| | Ythan Estuary and Meikle Loch SPA | 19 km | |
| | Troup, Pennan and Lion`s Heads SPA | 8 km | |
| SW_NE6_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | |
| | Buchan Ness to Collieston Coast SPA | 5 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 9 km | |
| | Troup, Pennan and Lion`s Heads SPA | 12 km | |
| SW_NE7_to_Peterhead DCSS | Buchan Ness to Collieston Coast SPA | 3 km | |
| | Loch of Strathbeg SPA/Ramsar | 6 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 9 km | |
| SW_NE8_to_Peterhead 1 | Buchan Ness to Collieston Coast SPA | Within the HNDFUE Corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 5 km | |
| | Troup, Pennan and Lion`s Heads SPA | 12 km | |
| Aspen_to_Fetteresso | Montrose Basin SPA/Ramsar | 2 km | |
| | Fowlsheugh SPA | 3 km | |
| Cedar_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the INTOG corridor | |
| | St Abb`s Head to Fast Castle SPA | 4 km | |
| | Firth of Forth SPA/Ramsar | 6 km | |
| | Forth Islands SPA | 14 km | |
| Peterhead_to_Cenos | Buchan Ness to Collieston Coast SPA | Within the INTOG corridor | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 2 km | |
| | Loch of Strathbeg SPA/Ramsar | 13 km | |
| Scaraben_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | Within the INTOG corridor | |
| | Buchan Ness to Collieston Coast SPA | 5 km | |
| | Ythan Estuary and Meikle Loch Ramsar | 13 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 13 km | |
| | Troup, Pennan and Lion`s Heads SPA | 14 km | |
| PDA1_to_Llandyfaelog | Bae Caerfyrddin/Carmarthen Bay SPA | Within the Celtic Sea corridor | |
| | Skomer, Skokholm and the Seas off Pembrokeshire SPA | Within the Celtic Sea corridor | |
| PDA2_to_South_Wales_Connection_Node | Skomer, Skokholm and the Seas off Pembrokeshire SPA | 12 km | |
| | Bae Caerfyrddin/Carmarthen Bay SPA | 14 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE7_ To_Peterhead | N/A | N/A | For these study corridors, no European sites have been screened into the assessment the potential impact of temporary disturbance as a result of increased SSC and sediment deposition. |
| SW_E1a_to_Hawthorn Pit | N/A | N/A | |
| SW_E1a_to_SW_e1b | N/A | N/A | |
| SW_E1a_to_SW_E1c_2 | N/A | N/A | |
| SW_E1c_1_to_SW_E1c_2 | N/A | N/A | |
| SW_E2a_1_to_SW_E2a_2 | N/A | N/A | |
| SW_E2a_2_to_SW_E1c_1 | N/A | N/A | |
| SW_E2b_to_SW_E2a_1 | N/A | N/A | |
| SW_E2a_2_to_Peterhead 2 | N/A | N/A | |
| SW_NE7_to_Peterhead DCSS | N/A | N/A | |
| Aspen_to_Beech | N/A | N/A | |
| Beech_to_Beech MPI | N/A | N/A | |
| Beech_to_Cedar | N/A | N/A | |
| Cedar_to_Aspen | N/A | N/A | |
| North Connect_to_Cenos | N/A | N/A | |
| Peterhead_to_Cenos | N/A | N/A | |
| Scaraben_to_Peterhead_2 | N/A | N/A | |
| Sinclair_to_Scaraben | N/A | N/A | |

# Changes in water quality

Changes to marine water quality arising from the use of HDD drilling fluids and additives, accidental leaks and spills from vessels, and the mobilisation of sediment bound contaminants (such as heavy metals and toxins) has the potential to indirectly affect subtidal habitats and species, fish, marine mammals, seabirds and waterfowl and waders in the marine and intertidal environment through toxicity and contamination. These effects typically occur within one tidal ellipse (10–17 km). Moreover, any change to water quality in the nearshore could affect intertidal areas during high tide, in addition to subtidal and surrounding waters, depending on the scale of the spill.

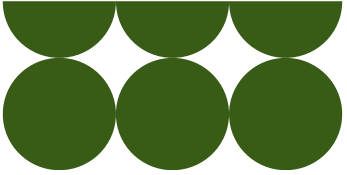
## Release of HDD Drilling Fluids

Assuming some, if not all routes will adopt the use of HDD for cable installation at landfall, the discharge of drilling fluids from HDD works at breakout locations has the potential to alter water quality and affect benthic habitats and ecology at the landfall location.

Drilling fluids will be selected from the OSPAR List of Substances/Preparations Used and Discharged Offshore (2021) which are Considered to Pose Little or No Risk to the Environment. Embedded mitigation measures will be implemented to minimise the release of drilling fluid leaks from the end of the ducts and any associated impacts. The discharged drilling fluids will also be subject to immediate dilution and rapid dispersal within the marine environment, particularly as the release will be in the shallow nearshore area where there is likely to be significant wave and tidal water movement. Therefore, any impacts of the release of drilling fluids and drilled solids at HDD breakout will be temporary and localised.

The release of drilling fluids and drilled solids at HDD breakout will reduce water quality locally for a period during and immediately after release of the fluids. Any drilled solids released are predicted to settle rapidly in the vicinity of the punch out. Constituents of the drilling fluids, including silt-clay sized particles such as bentonite have a maximum theoretical range of approximately one tidal excursion ellipse (which will differ for each cable route). This is believed to be an appropriate method of assumption based on both professional judgement and consideration of worst-case for fine particulates. However, dilution processes over this distance will rapidly result in no detectable change from the baseline.

The drilling fluid discharges from the Projects HDD operations will be single events over a short period of time and rapidly dispersed in an open sea coastal environment. Due to dilution/dispersal, SSC above background levels resulting from releases of drilling fluids will be restricted to the immediate vicinity of the HDD exit. Therefore, only receptors in the immediate vicinity of the HDD breakouts are likely to be in contact with drilling fluids, which pose little risk to the wider environment. Overall, given the embedded mitigation and short period of works, the magnitude of impact on benthic receptors is considered negligible, combined with a high sensitivity some of the receptors in the immediate areas, effects are predicted to be minor and therefore not significant. Therefore, it is not anticipated that there will be an adverse effect on site integrity.



### Mobilisation of contaminants

Contaminants, such as heavy metals and polycyclic aromatic hydrocarbons (PAHs), present in concentrations above thresholds of concern, could also have detrimental impacts on benthic species when resuspended into sediment plumes or redeposited to the seabed. For example, hydrocarbons in sediments are known to reduce the abundance of some species, particularly crustaceans such as amphipods.

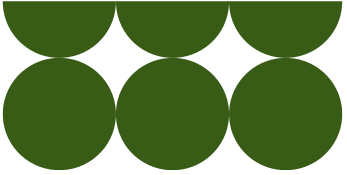
Contaminants are generally more highly associated with finer material such as silts and clays. Where finer sediments do occur, the potential for mobilisation of contaminants is limited, in the same way as the mobilisation of the sediments themselves will be limited, as set out above. In addition, dilution of suspended particulate matter, is anticipated to occur rapidly. Thus, the concentration of contaminants is not expected to exceed the existing background levels. In addition, natural disturbance to the sediment such as during storm events and periods of strong wave action will mobilise contaminants and subject benthic habitats and species to temporary and localised changes in water quality and as a result, these habitats and species will have a tolerance to moderate changes in the surrounding water quality. Whilst it is recognised that each cable route will be different, these factors mean that the likely resulting magnitude of impact will be negligible, irrespective of the value and sensitivity of benthic species. Therefore, the effect on benthic receptors from the disturbance of sediment-bound contaminants is unlikely to be significant and so it is not anticipated that there will be any adverse effect on site integrity.

### Discharges, Leaks and Spills from Vessels, including Loss of Oils

The accidental release of pollutants (e.g., oil, fuels, lubricants, chemicals) and any planned release of wastewater could occur from any of the vessels associated with the Installation Phase activities and any support vessels present and has the potential to alter water quality. Vessels involved in Installation Phase activities could have cleaning fluids, oils, and hydraulic fluids onboard (as well as fuels), which could be accidentally discharged, releasing hydrocarbons and chemical pollutants into the surrounding seawater, which could then settle on the seabed with consequences for benthic habitats and species.

The habitats of the designated sites with benthic habitats as qualifying features will support diverse communities of benthic invertebrates, which can be highly susceptible to effects from spills, as contaminants can settle into and remain in the sediments. Studies have indicated that benthic sediments contaminated with oils and hydrocarbons can contribute to reduced densities of macrofauna, as well as differences in recruitment and development of assemblages (Berge *et al.*, 1990). However, these effects are related to extensive spills such as from large oil tankers rather than small spills from other vessels.

To ensure the risk of accidental spills is as low as reasonably practicable, therefore it has been assumed that each individual cable lay project will adhere to relevant guidance (e.g., Pollution Prevention Guidance). A Construction Environmental Management Plan (CEMP) including an Emergency Spill Response Plan and Waste Management Plan should also be implemented during the installation phase of each individual project to minimise releases. Appropriate Health, Safety, and Environment (HSE) procedures (identified in the CEMP) will also be implemented, with strict weather and personnel limits to reduce any risk of accidental spillage. Furthermore, preparedness and swift response is essential for effective



spill management and as such, response plans will be in place should an incident occur. Control measures and Shipboard Oil Pollution Emergency Plans (SOPEP) will be in place and adhered to under The International Convention for the Prevention of Pollution from Ships (MARPOL) Annex I requirements for all vessels. Planned effluent dischargers will be compliant with MARPOL Annex IV 'Prevention of Pollution from Ships' standards.

Thus, the risk of an accidental spill occurring is considered to be unlikely. However, should an accidental spill or leak occur, it would be very small in extent and subject to immediate dilution and rapid dispersal within the marine environment and thus would have only a low magnitude. Combined with a low to high sensitivity of receptors, the overall appraisal of the effect to ecology from accidental leaks and spills from vessels and equipment is appraised to be minor risk and therefore not significant. Thus, it is not anticipated that there will be any adverse effects on site integrity. The assessment is provided in **Table 8**.

## Mitigation

The following measures have the potential to avoid and/or reduce the impact of changes in water quality. Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar:

- Consideration of timings of works, especially in close proximity of natal rivers and breeding sites;
- CEMP including an Emergency Spill Response Plan and Waste Management Plan during the installation phase of each individual project to minimise releases;
- Appropriate HSE procedures (identified in the CEMP), with strict weather and personnel limits to reduce any risk of accidental spillage;
- Response plans, including control measures and SOPEP in place and adhered to under MARPOL Annex I requirements for all vessels;
- Planned effluent dischargers compliant with MARPOL Annex IV 'Prevention of Pollution from Ships' standards; and
- Drilling fluids selected from the OSPAR List of Substances/Preparations Used and Discharged Offshore (2021) which are Considered to Pose Little or No Risk to the Environment.

## Table 8: Assessment of the potential for changes in water quality to have an AEoSI

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Afon Gwyrfai a Llyn Cwellyn SAC | Within the HND corridor | These sites were screened in because they are located within one tidal ellipse (17 km) of the cable route.<br>There is therefore a risk that the water quality within this site could be affected. However, any effect is likely to be temporary and localised. Risk of impact can be reduced through application of appropriate best practice mitigation as outlined above.<br>Therefore, impacts to the extent and quality of habitat features and/or the size and distributions of populations of species features are considered to be negligible and conservation objectives of these site will not be hindered and thus no AEoSI. |
| | North Anglesey Marine/Gogledd Môn Forol SAC | Within the HND corridor | |
| | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | |
| | Y Twyni o Abermenai i Aberffraw/Abermenai to Aberffraw Dunes SAC | Within the HND corridor | |
| | Anglesey Terns/Morwenoliaid Ynys Môn SPA | <1 km | |
| | Glannau Mon Cors Heli/Anglesey Coast: Saltmarsh SAC | <1 km | |
| | North Channel SAC | 1 km | |
| | Luce Bay and Sands SAC | 2 km | |
| | Croker Carbonate Slabs SAC | 5 km | |
| | Glan-traeth SAC | 6 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 8 km | |
| | Ailsa Craig SPA | 9 km | |
| | Liverpool Bay SPA | 9 km | |
| | Pisces Reef Complex SAC | 13 km | |
| | River Bladnoch SAC | 14 km | |
| | Ynys Seiriol/Puffin Island SPA | 14 km | |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | Within the HND corridor | |
| | Northumbria Coast SPA/Ramsar | Within the HND corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| R4_3_to_Weston_Marsh | Coquet Island SPA | 3 km | |
| | Farne Islands SPA | 5 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 5 km | |
| | Gibraltar Point Ramsar/SPA | 100 m from the HND corridor | |
| | Greater Wash SPA | Within the HND corridor | |
| | Inner Dowsing, Race Bank and North Ridge SAC | Within the HND corridor | |
| | Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC | 100 m from the HND corridor | |
| | Southern North Sea SAC | Within the HND corridor | |
| | The Wash SPA/Ramsar | Within the HND corridor | |
| | The Wash and North Norfolk Coast SAC | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar | 6 km | |
| | Humber Estuary SAC | 13 km | |
| SW_E1a_to_Hawthorn Pit | Northumbria Coast SPA/Ramsar | Within the HND corridor | |
| | Coquet Island SPA | 3 km | |
| | Teesmouth and Cleveland Coast SPA/Ramsar | 7 km | |
| SW_NE7_ To_Peterhead | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 5 km | |
| | Sands of Forvie SAC | 12 km | |
| | Troup, Pennan and Lion`s Heads SPA | 12 km | |
| SW_NE4_to_New Deer | Moray Firth SPA | 7 km | |
| | Troup, Pennan and Lion`s Heads SPA | 8 km | |
| SW_E1a_to_Fiddes | Fowlsheugh SPA | 2 km | |
| | River Dee SAC | 9 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Kilmarnock_South_to_Ballantrae | Ailsa Craig SPA | 1 km | |
| | River Bladnoch SAC | 15 km | |
| SW_N4_to_Arnish_(Lewis) | Inner Hebrides and the Minches SAC | Within the HND corridor | |
| | Lewis Peatlands SPA/Ramsar | Within the HND Corridor | |
| R4_6_to_Penwortham | Liverpool Bay SPA | Within the HND corridor | |
| | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HND corridor | |
| | Shell Flat and Lune Deep SAC | 2 km | |
| | Morecambe Bay and Duddon Estuary SPA/Ramsar | 7 km | |
| R4_4_to_Bodelwyddan | Liverpool Bay SPA | Within the HND corridor | |
| | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | |
| | The Dee Estuary SAC | 9 km | |
| | The Dee Estuary SPA/Ramsar | 9 km | |
| | Anglesey Terns/Morwenoliaid Ynys Môn SPA | 9 km | |
| | North Anglesey Marine/Gogledd Môn Forol SAC | 11 km | |
| | Ynys Seiriol/Puffin Island SPA | 11 km | |
| R4_5_to_Penwortham | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HND corridor | |
| | Liverpool Bay SPA | Within the HND corridor | |
| | Shell Flat and Lune Deep SAC | 2 km | |
| | Morecambe Bay and Duddon Estuary SPA/Ramsar | 7 km | |
| SW_N1_to_Spittal | North Caithness Cliffs SPA | Within the HND corridor | |
| | River Thurso SAC | Within the HND corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Caithness Lochs SPA/Ramsar | 1 km | |
| | Caithness and Sutherland Peatlands SPA/Ramsar | 4 km | |
| PA_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| | Greater Wash SPA | Within the HND corridor | |
| | Southern North Sea SAC | Within the HND corridor | |
| | Flamborough Head SAC | 2 km | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| | Flamborough & Filey Coast SPA | 5 km | |
| | Humber Estuary SAC | 6 km | |
| R4_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| | Greater Wash SPA | Within the HND corridor | |
| | Southern North Sea SAC | Within the HND corridor | |
| | Flamborough Head SAC | 2 km | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| | Flamborough & Filey Coast SPA | 5 km | |
| | Humber Estuary SAC | 6 km | |
| R4_2_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| | Greater Wash SPA | Within the HND corridor | |
| | Southern North Sea SAC | Within the HND corridor | |
| | Flamborough Head SAC | 2 km | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| | Flamborough & Filey Coast SPA | 5 km | |
| | Humber Estuary SAC | 6 km | |
| SW_E1a_to_Lincolnshire Connection Node | Greater Wash SPA | Within the HND corridor | |
| | Southern North Sea SAC | Within the HND corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Humber Estuary SAC | 5 km | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| | Gibraltar Point SPA/Ramsar | 15 km | |
| | The Wash and North Norfolk Coast SAC | 15 km | |
| SW_W1_to_Ballantrae | Ailsa Craig SPA | 7 km | |
| | Inner Hebrides and the Minches SAC | 14 km | |
| | River Bladnoch SAC | 15 km | |
| Shetland_to_Blackhillock | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Moray Firth SPA | Within the HNDFUE corridor | |
| | Noss SPA | Within the HNDFUE corridor | |
| | River Spey SAC | Within the HNDFUE corridor | |
| | East Caithness Cliffs SPA | 2 km | |
| | Caithness and Sutherland Peatlands SPA/Ramsar | 8 km | |
| | Moray Firth SAC | 9 km | |
| | Mousa SAC | 9 km | |
| | Tips of Corsemaul and Tom Mor SPA | 9 km | |
| | Yell Sound Coast SAC | 9 km | |
| | Mousa SPA | 11 km | |
| | Sumburgh Head SPA | 11 km | |
| | The Vadills SAC | 13 km | |
| | Sullom Voe SAC | 14 km | |
| | Berriedale and Langwell Waters SAC | 15 km | |
| | Pobie Bank Reef SAC | 17 km | |
| SW_E1a_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the HNDFUE corridor | |

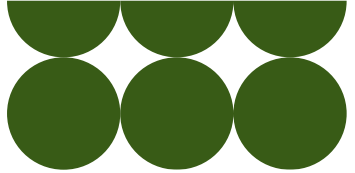
| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Berwickshire and North Northumberland Coast SAC | 3 km | |
| | St Abb's Head to Fast Castle SPA | 4 km | |
| | Firth of Forth SPA/Ramsar | 6 km | |
| | Forth Islands SPA | 10 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Southern North Sea SAC | Within the HNDFUE corridor | |
| | Greater Wash SPA | Within the HNDFUE corridor | |
| | Humber Estuary SPA/Ramsar | 2 km | |
| | Humber Estuary SAC | 4 km | |
| | Inner Dowsing, Race Bank and North Ridge SAC | 7 km | |
| | Gibraltar Point SPA/Ramsar | 15 km | |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | 15 km | |
| | Southern North Sea SAC | Within the HNDFUE corridor | |
| | The Wash SPA/Ramsar | Within the HNDFUE corridor | |
| | Inner Dowsing, Race Bank and North Ridge SAC | 1 km | |
| | Gibraltar Point SPA / Ramsar | 5 km | |
| | Humber Estuary SPA/Ramsar | 5 km | |
| | Humber Estuary SAC | 7 km | |
| SW_E2a_2_to_Near Richborough | Sandwich Bay SAC | Within the HNDFUE corridor | |
| | Southern North Sea SAC | Within the HNDFUE corridor | |
| | Thanet Coast SAC | Within the HNDFUE corridor | |
| | Thanet Coast and Sandwich Bay SPA/ Ramsar | Within the HNDFUE corridor | |
| | Dogger Bank SAC | <1 km | |
| | North Norfolk Sandbanks and Saturn Reef SAC | 3 km | |
| | Outer Thames Estuary SPA | 4 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Margate and Long Sands SAC | 5 km | |
| SW_E2a_2_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | 6 km | |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA/Ramsar | 8 km | |
| | Ythan Estuary and Mekle Loch Ramsar | 12 km | |
| | Sands of Forvie SAC | 14 km | |
| SW_E3_to_Fiddes | Fowlsheugh SPA | 3 km | |
| | River Dee SAC | 9 km | |
| | River South Esk SAC | 15 km | |
| SW_N2_to_Near Dounreay | Caithness and Sutherland Peatlands SPA/Ramsar | Within the HNDFUE corridor | |
| | North Caithness Cliffs SPA | Within the HNDFUE corridor | |
| | Caithness Lochs SPA/Ramsar | 3 km | |
| | Cape Wrath SPA | 8 km | |
| | River Thurso SAC | 10 km | |
| | Loch Roag Lagoons SAC | 17 km | |
| SW_N3_to_Arnish | Inner Hebrides and the Minches SAC | Within the HNDFUE corridor | |
| | Lewis Peatlands SPA/Ramsar | Within the HNDFUE corridor | |
| | Langavat SAC | 15 km | |
| SW_NE1a_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Pobie Bank Reef SAC | 5 km | |
| | Noss SPA | 5 km | |
| | Yell Sound Coast SAC | 9 km | |
| | The Vadills SAC | 14 km | |
| | Sullom Voe SAC | 15 km | |
| SW_NE1b_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Pobie Bank Reef SAC | 5 km | |
| | Noss SPA | 5 km | |
| | Yell Sound Coast SAC | 9 km | |
| | The Vadills SAC | 14 km | |
| | Sullom Voe SAC | 15 km | |
| SW_NE1c_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Pobie Bank Reef SAC | <1 km | |
| | Noss SPA | 9 km | |
| | Yell Sound Coast SAC | 9 km | |
| | The Vadills SAC | 14 km | |
| | Sullom Voe SAC | 15 km | |
| SW_NE2_to_Spittal | Caithness and Sutherland Peatlands SPA/Ramsar | Within HNDFUE corridor | |
| | Caithness Lochs SPA/Ramsar | Within HNDFUE corridor | |
| | Caithness Lochs SPA/Ramsar | Within HNDFUE corridor | |
| | River Thurso SAC | Within the HNDFUE corridor | |
| | North Caithness Cliffs SPA | 5 km | |
| | Pentland Firth Islands SPA | 14 km | |
| | Pentland Firth Islands SPA | 14 km | |
| SW_NE3_to_New_Deer_2 | Troup, Pennan and Lion's Heads SPA | 2 km | |
| | Loch of Strathbeg SPA/Ramsar | 7 km | |
| SW_NE4_to_New Deer | Moray Firth SPA | 7 km | |
| | Troup, Pennan and Lion`s Heads SPA | 7 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE6_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | |
| | Buchan Ness to Collieston Coast SPA | 5 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 9 km | |
| | Troup, Pennan and Lion`s Heads SPA | 12 km | |
| SW_NE7_to_Peterhead DCSS | Buchan Ness to Collieston Coast SPA | 3 km | |
| | Loch of Strathbeg SPA/Ramsar | 6 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 9 km | |
| | Sands of Forvie SAC | 14 km | |
| SW_NE8_to_Peterhead 1 | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | |
| | Troup, Pennan and Lion`s Heads SPA | 12 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/ Ramsar | 5 km | |
| Aspen_to_Fetteresso | Montrose Basin SPA/Ramsar | 2 km | |
| | Fowlsheugh SPA | 3 km | |
| | River South Esk SAC | 6 km | |
| | River Dee SAC | 6 km | |
| Cedar_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the INTOG corridor | |
| | Berwickshire and North Northumberland Coast SAC | 2 km | |
| | St Abb`s Head to Fast Castle SPA | 4 km | |
| | Firth of Forth SPA/Ramsar | 6 km | |
| | River Tweed SAC | 6 km | |
| | Forth Islands SPA | 14 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Peterhead_to_Cenos | Buchan Ness to Collieston Coast SPA | Within the INTOG corridor | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 2 km | |
| | Loch of Strathbeg SPA/Ramsar | 13 km | |
| Scaraben_to_Peterhead_2 | Loch of Strathbeg SPA/Ramsar | Within the INTOG corridor | |
| | Buchan Ness to Collieston Coast SPA | 5 km | |
| | Ythan Estuary and Meikle Loch Ramsar | 13 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 13 km | |
| | Sands of Forvie SAC | 14 km | |
| | Troup, Pennan and Lion`s Heads SPA | 14 km | |
| PDA1_to_Llandyfaelog | Bae Caerfyrddin/Carmarthen Bay SPA | Within the Celtic Sea corridor | |
| | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| | Carmarthen Bay Dunes/Twyni Bae Caerfyrddin SAC | Within the Celtic Sea corridor | |
| | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| | Skomer, Skokholm and the Seas off Pembrokeshire SPA | Within the Celtic Sea corridor | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | Within the Celtic Sea corridor | |
| | Afon Tywi/River Tywi SAC | 4 km | |
| PDA2_to_South_Wales_Connection_Node | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |



| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Kenfig/Cynffig SAC | Within the Celtic Sea corridor | |
| | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | 8 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 9 km | |
| | Skomer, Skokholm and the Seas off Pembrokeshire SPA | 12 km | |
| | Bae Caerfyrddin/Carmarthen Bay SPA | 14 km | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | 15 km | |
| PDA3_to_Pyworthy | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| | Braunton Burrows SAC | 4 km | |
| | Lundy SAC | 7 km | |
| SW_NE7_ To_Peterhead | N/A | N/A | For these study corridors, no European sites have been screened into the assessment the potential impact of changes in water quality. |
| SW_E1a_to_SW_e1b | N/A | N/A | |
| SW_E1a_to_SW_E1c_2 | N/A | N/A | |
| SW_E1c_1_to_SW_E1c_2 | N/A | N/A | |
| SW_E2a_1_to_SW_E2a_2 | N/A | N/A | |
| SW_E2a_2_to_SW_E1c_1 | N/A | N/A | |
| SW_E2b_to_SW_E2a_1 | N/A | N/A | |
| Aspen_to_Beech | N/A | N/A | |
| Beech_to_Beech MPI | N/A | N/A | |
| Beech_to_Cedar | N/A | N/A | |
| Cedar_to_Aspen | N/A | N/A | |
| North Connect_to_Cenos | N/A | N/A | |
| Sinclair_to_Scaraben | N/A | N/A | |

# Introduction of INNS to subtidal benthic habitats and species

Invasive Non-Native Species (INNS) can be introduced through multiple sources, particularly via the hulls of, and discharge of ballast water from international vessels. INNS can also be introduced and/or spread by the addition of substrates, such as rock placement and concrete mattresses, used for cable protection (Adams *et al.*, 2014; Coolen et al., 2020). INNS can also be introduced into the terrestrial environment (for example, species such as Japanese knotweed, giant hogweed or the water fern *Azolla filiculoides*) on equipment such as digger buckets, and excavator tracks. However, since the HND Implementation Plan focuses on the marine and coastal environment, with much smaller coverage of the terrestrial environment, this section and its tables focus on marine sites.

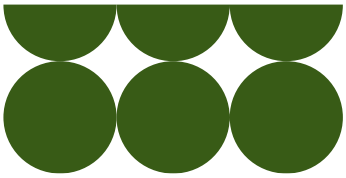
The accidental introduction of INNS is a risk for any European site where works will take place. It has the potential to cause detrimental changes to benthic habitats. Whilst most non-native species are unlikely to become invasive, those that do can out-compete native species and introduce diseases which could result in significant changes to community composition and mortality. The introduction of INNS could occur from the different vessels that may be required during the installation, maintenance, or decommissioning phases of each individual cable; and/or the introduction of untreated substrates at crossings with other infrastructure along each cable route. If INNS were to be introduced, the effect on benthic habitats could be significant and long-term.

In addition, INNS introduction may lead to ecosystem level effects, impacting foraging species such as marine mammals and seabirds, via effects on availability to key prey species. The impact of changes in prey availability have been discussed further in the later section on **Prey Availability**.

The methods, and therefore relative precautions of the installation, maintenance, and decommissioning activities for each cable route are not currently established. Similarly, the exact location, extent, and source materials used for any required cable protection is not currently known. Therefore, it is not possible to accurately assess the impact of INNS at plan level; this will be required at project level. Thus, the precautionary principle must be applied, and it must be assumed that there is potential for INNS to be introduced; pertinently, within the study corridors which run directly through sites designated for subtidal benthic features. The assessment is provided in **Table 9**.

## Mitigation

A number of industry best practice mitigations would lower the probability of INNS transmission to benthic habitats and thus reduce the risk of significantly affecting a European site whether in the marine, intertidal or terrestrial environment. Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar:



- All project vessels should adhere to the International Maritime Organisation (IMO) Guidelines for the control and management of ship'' biofouling, and the International Convention for the Control and Management of Ships' Ballast Water and Sediments, to minimize the transfer of invasive aquatic species.
- Any material introduced into the marine environment, such as rock protection material, should be from a suitable source to ensure no INNS can be introduced.
- Any works in the terrestrial and intertidal environment will require a pre-construction survey for invasive species and an eradication programme proposed if required. If invasive species are present careful cleaning of equipment and plant will be required to avoid spread.

Ultimately, a biosecurity plan should be produced by the applicant for each project once a planning application is being devised, following the latest guidance on INNS from the Great Britain Non-Native Species Secretariat. This can be adopted across all cable route projects, at plan level, to reduce the overall risk of INNS introductions.

With the adherence to these guidelines and measures, INNS introductions would be considered unlikely, with any impacts limited to individual cable study corridors. Thus, significantly reducing the likelihood of significantly adverse effects on a designated site.

## Table 9: Assessment of the potential for introduction of INNS subtidal benthic habitats and species to have an AEoSI

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | These sites were screened in due to the associated study corridors running directly through their boundaries and are as designated for subtidal benthic habitats features.<br>Should industry standard mitigation measures be implemented by the applicant, including the production of a biosecurity plan, the risk of INNS being introduced would be reduced. However, the opportunities for INNS to spread will differ on a case-by-case basis, relating to the ecological context of each cable's location and chosen cable design.<br>Further consideration of the project design for the planning application, installation and mitigation measures will be required. |
| PA_2_to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | |
| R4_3_to_Weston_Marsh | Inner Dowsing, Race Bank and North Ridge SAC | Within the HND corridor | |
| | The Wash and North Norfolk Coast SAC | Within the HND corridor | |
| R4_4_to_Bodelwyddan | Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay SAC | Within the HND corridor | |
| PA_1_to_Birkhill_Wood | Dogger Bank SAC | Within the HND corridor | |
| R4_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| R4_2_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor | |
| SW_E2a_2_to_Near Richborough | Thanet Coast SAC | Within the HNDFUE corridor | |
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| SW_E1a_to_Hawthorn Pit | N/A | N/A | For these study corridors, no European sites have been screened into the assessment |
| SW_NE7_ To_Peterhead | N/A | N/A | |
| SW_NE4_to_New Deer | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_SW_e1b | N/A | N/A | the potential impact of introduction of INNS. |
| SW_E1a_to_Fiddes | N/A | N/A | |
| Kilmarnock_South_to_Ballantrae | N/A | N/A | |
| SW_N4_to_Arnish_(Lewis) | N/A | N/A | |
| R4_6_to_Penwortham | N/A | N/A | |
| R4_5_to_Penwortham | N/A | N/A | |
| SW_N1_to_Spittal | N/A | N/A | |
| SW_E1a_to_Linconshire Connection Node | N/A | N/A | |
| SW_W1_to_Ballantrae | N/A | N/A | |
| Shetland_to_Blackhillock | N/A | N/A | |
| SW_E1a_to_Branxton | N/A | N/A | |
| SW_E1a_to_SW_E1c_2 | N/A | N/A | |
| SW_E1c_1_to_Lincolnshire Connection Node | N/A | N/A | |
| SW_E1c_1_to_SW_E1c_2 | N/A | N/A | |
| SW_E2a_1_to_SW_E2a_2 | N/A | N/A | |
| SW_E2a_2_to_SW_E1c_1 | N/A | N/A | |
| SW_E2b_to_SW_E2a_1 | N/A | N/A | |
| SW_E2a_2_to_Peterhead 2 | N/A | N/A | |
| SW_E3_to_Fiddes | N/A | N/A | |
| SW_N2_to_Near_Dounreay | N/A | N/A | |
| SW_N3_to_Arnish | N/A | N/A | |
| SW_NE1a_to_Shetland | N/A | N/A | |
| SW_NE1b_to_Shetland | N/A | N/A | |
| SW_NE1c_to_Shetland | N/A | N/A | |
| SW_NE2_to_Spittal | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE3_to_New_Deer_2 | N/A | N/A | |
| SW_NE4_to_New Deer | N/A | N/A | |
| SW_NE6_to_Peterhead 2 | N/A | N/A | |
| SW_NE7_to_Peterhead DCSS | N/A | N/A | |
| SW_NE8_to_Peterhead 1 | N/A | N/A | |
| Aspen_to_Beech | N/A | N/A | |
| Aspen_to_Fetteresso | N/A | N/A | |
| Beech_to_Beech MPI | N/A | N/A | |
| Beech_to_Cedar | N/A | N/A | |
| Cedar_to_Aspen | N/A | N/A | |
| Cedar_to_Branxton | N/A | N/A | |
| North Connect_to_Cenos | N/A | N/A | |
| Peterhead_to_Cenos | N/A | N/A | |
| Scaraben_to_Peterhead_2 | N/A | N/A | |
| Sinclair_to_Scaraben | N/A | N/A | |
| PDA3_to_Pyworthy | N/A | N/A | |
| PDA2_to_South_Wales_Connection_Node | N/A | N/A | |

# EMF impacts

During cable operation, high voltage cables emit EMF, which have the potential to affect subtidal benthic receptors, and sensitive fish species (e.g. elasmobranchs, eels, and salmonids) in the immediate vicinity (typically tens of metres (Orpwood *et al.*, 2015; NIRAS, 2006)) of the cables. Some cable designs include a metallic outer sheath so the cables will produce no external electrical field, though there is still potential for induced electrical fields via the movement of the sea through the cable's magnetic field.

How the cables are laid will also influence the extent of EMF effects. Cables can often be laid singularly. Where multiple cables are required, these can be laid in two separate parallel trenches (unbundled), or in a single trench with the cables bundled together. In the bundled configuration, the interactions between the magnetic fields associated with the opposing poles results in cancellation, and a reduced overall field strength. Where the cables are separately laid, the distance between the two poles reduces the degree of field cancellation, and as such the resulting fields are of greater strength. The levels of EMF and attenuation distances vary by the level of shielding the cable has, burial depth, burial configuration, and transmission power. Furthermore, the tidal movement of seawater over the cables will result in the generation of localised induced electric fields. As such, EMF modelling for each cable route would provide the data to assess the impacts of EMF on a case-by-case basis.

There is very little information about the sensitivity of benthic species to EMF, however, there have been a small number of investigations in laboratory experiments (Boles & Lohmann, 2003; Bochert & Zettler, 2004; Jakubowska *et al.*, 2019). These studies suggest some detection in benthic invertebrates may be possible although there have been no direct impacts observed at EMF levels typical of a high-voltage direct current (HVDC) subsea cable (ORJIP Ocean Ecology, 2022). Thus, whilst EMF will be emitted whenever the cable is active, and is therefore a permanent effect during cable operation, the spatial extent is very small, and effects are restricted to small short-term behavioural responses. Consequently, the magnitude of the impact to all benthic habitats and species is considered negligible.

Very few studies have investigated the effects of anthropologically generated EMF on fish physiology and behaviour (Nyqvist, *et al.*, 2020; Copping, *et al.*, 2021). Most have focussed on elasmobranchs and migratory species that utilise magnetic cues for navigation including the effect that EMFs have on swimming behaviour and migration. Reported effects of exposure to artificially created EMFs include a reduction in swimming speed in migrating European eel (Westerberg & Lagenfelt, 2008), attraction to cables and reduced swimming activity for several species of elasmobranchs (Gill, *et al.*, 2009) and attraction to magnetic fields in free swimming trout larvae (Formicki *et al.*, 2004). It has been suggested that species that use electromagnetic perception for prey detection such as elasmobranchs may experience reduced foraging efficiency as a result of exposure to EMF.

Studies investigating the physiological effect of long-term exposure to EMF on juvenile flounder (Bochert & Zettler, 2004) and embryos and larvae of rainbow trout (Fey, *et al.*, 2019) found no effect on development or survival in these species. Salmon eggs exposed to EMF

with a strength of 2 millitesla (mT) exhibited greater water permeability than controls, however this did not have any detrimental effects on embryological development or survival (Sadowski, et.al., 2007). Furthermore, the intensity of the experiment was several orders of magnitude higher than the EMF anticipated from the HVDC cables of the schemes.

Due to the different levels of sensitivity of different species and groups of fish and shellfish, the appraisal of effect of maximum EMF generated during electricity transmission will need to be considered at the project level for each cable route.

There is evidence that EMF anomalies from cables can affect the behaviour of migratory fish. For example, studies of tagged European eel observed a reduction in the swimming speed (Westerberg & Begout-Anras, 2000; Öhman, *et al.*, 2007; Westerberg & Lagenfelt, 2008) and a change in swimming trajectories during passage over a cable (Öhman, *et al.*, 2007; Westerberg & Begout-Anras, 2000). However, a field study of behavioural responses of juvenile salmon to a subsea HVDC cable in the San Francisco Bay found no significant difference to migration success (Wyman, *et al.*, 2018). During migration the salmon needed to cross the location of the cable in order to complete their route. Some individuals took a longer route than expected and others showed some attraction to the cables. However, no overall adverse or beneficial direct impact was observed.

Biotelemetry studies of the response of migrating European eels to energised subsea cables showed they did not pose a strong barrier to the migration movements of this EMF sensitive species. Some fish did show small brief perturbations in their directional movements as they passed over the HVDC cable, but these were not strong avoidance actions (Westerberg & Begout-Anras, 2000). Beyond these findings, there are large data gaps regarding fish migration in relation to EMF (Wyman, *et al.*, 2018; Nyqvist, *et al.*, 2020).

Pelagic fish species are unlikely to come into contact with, or are able to easily avoid, any increase in EMF in a small area around the cable. Additionally, pelagic fish are known to swim continually, often covering several kilometres daily and so the time spent in the vicinity of the cable will be limited. Pelagic species are thought to have low sensitivity to EMF and there was no evidence found to suggest that clupeids or scombrids are able to detect EMF or are affected by it in anyway (Snyder *et al.*, 2019). Thus, a localised increase in EMF is expected to have no detectable effect of EMF on pelagic species.

Demersal fish spend the majority of their time on or above the seabed, which could bring them into contact with the area of increased EMF generated by subsea cables (Hutchison, *et al.*, 2018). However, the maximum EMF estimated to be generated by the cables is not anticipated to be high enough to elicit any physiological or behavioural responses. This is based on evidence from studies exposing juvenile flounder to magnetic fields with a strength of 3700 microtesla (μT), with fish showing no adverse effects to long term exposure (Bochert & Zettler, 2004). It has been suggested that plaice are able to use magnetic fields as navigational cues (Metcalfe, *et al.*, 1993) however no studies have been undertaken to quantify how sensitive they are. Field data from surveys investigating the effect of an offshore windfarm in the Kattegat area of the Baltic Sea, concluded that EMF was unlikely to alter cod behaviour. This was based on observations of fish aggregating within the vicinity of cables during both active and inactive electricity transmission over several years in comparison to reference areas (Bergström, *et al.*, 2013; Hammar, *et al.*, 2014).

On balance the evidence indicates that the emitted EMF from cables will not result in measurable responses in demersal fish. Should some individual fish avoid the area of EMF around the cable this behavioural response is expected to be very localised as EMF effects attenuate within a very short distance from the buried cable.

The EMF emitted in close proximity to the cable is a long-term effect but as transmission strength will be variable maximum effects are not expected to occur for the entire operational phase of each cable. Whilst EMF will be emitted whenever the cable is active, and is therefore a permanent effect during cable operation, the spatial extent is very small, and effects are restricted to small short-term behavioural responses. Consequently, the magnitude of the effect to all benthic habitats and species is considered negligible. The assessment is provided in **Table 10**.

## Mitigation

The following measures have the potential to avoid and/or reduce the impact of EMF on receptors:

- Raise the priority of environmental considerations to an equal footing with other, more-traditional considerations at this strategic level, such as avoiding designated sites, and the need to cross third-party infrastructure, as far as possible;
- Detailed route development and micro-routeing within the study corridor, informed by pre-installation evaluation of site-specific survey data to avoid or minimise localised engineering and environmental constraints, including minimising the footprint as much as possible;
- Consideration of the need for EMF modelling, to inform design;
- Consideration of the configuration of multiple cables; and
- Consideration of the required depth of lowering to minimise EMF emissions.

## Table 10: Assessment of the potential for EMF impacts to have an AEoSI

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | These sites were screened in as they are designated for benthic features and the associated study corridors running directly through their boundaries.<br>The level of EMF produced by a buried HVDC cable is expected to be of a negligible to low magnitude and low intensity. Electrosensitive qualifying features of the designated sites are not expected to be greatly affected by the presence of a subsea cable.<br>Therefore, impacts to the extent and quality of habitat features are considered to be negligible and conservation objectives of these site will not be hindered; thus no AeoSI has been concluded.. |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | |
| R4_3_to_Weston_Marsh | Inner Dowsing, Race Bank and North Ridge SAC | Within the HND corridor | |
| | The Wash and North Norfolk Coast SAC | Within the HND corridor | |
| R4_4_to_Bodelwyddan | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | |
| PA_1_to_Birkhill_Wood | Dogger Bank SAC | Within the HND corridor | |
| R4_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| R4_2_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor | |
| SW_E2a_2_to_Near Richborough | Thanet Coast SAC | Within the HNDFUE corridor | |
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| Ballantrae_to_Pentir | Afon Gwyrfai a Llyn Cwellyn SAC | Within the HND corridor | These sites were screened in as they are designated for migratory fish features and the |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_N1_to_Spittal | River Thurso SAC | Within the HND corridor | associated study corridors running directly through their boundaries.<br>The level of EMF produced by a buried HVDC cable is expected to be of a negligible to low magnitude and low intensity. Electrosensitive qualifying features of the designated sites are not expected to be greatly affected by the presence of a subsea cable.<br>Therefore, impacts to the extent and quality of habitat features are considered to be negligible and conservation objectives of these sites will not be hindered thus no AEoSI has been concluded. |
| Shetland_to_Blackhillock | River Spey SAC | Within the HNDFUE corridor | |
| SW_NE2_to_Spittal | River Thurso SAC | Within the HNDFUE corridor | |
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| | River Tywi/Afon Tywi SAC | 4 km | |
| SW_E1a_to_Hawthorn Pit | N/A | N/A | For these study corridors, no European sites have been screened into the assessment for potential impacts from EMF emissions. |
| SW_NE7_ To_Peterhead | N/A | N/A | |
| SW_NE4_to_New Deer | N/A | N/A | |
| SW_E1a_to_SW_e1b | N/A | N/A | |
| SW_E1a_to_Fiddes | N/A | N/A | |
| Kilmarnock_South_to_Ballantrae | N/A | N/A | |
| SW_N4_to_Arnish_(Lewis) | N/A | N/A | |
| R4_6_to_Penwortham | N/A | N/A | |
| R4_5_to_Penwortham | N/A | N/A | |
| SW_E1a_to_Linconshire Connection Node | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_W1_to_Ballantrae | N/A | N/A | |
| SW_E1a_to_Branxton | N/A | N/A | |
| SW_E1a_to_SW_E1c_2 | N/A | N/A | |
| SW_E1c_1_to_Lincolnshire Connection Node | N/A | N/A | |
| SW_E1c_1_to_SW_E1c_2 | N/A | N/A | |
| SW_E2a_1_to_SW_E2a_2 | N/A | N/A | |
| SW_E2a_2_to_SW_E1c_1 | N/A | N/A | |
| SW_E2b_to_SW_E2a_1 | N/A | N/A | |
| SW_E2a_2_to_Peterhead 2 | N/A | N/A | |
| SW_E3_to_Fiddes | N/A | N/A | |
| SW_N2_to_Near_Dounreay | N/A | N/A | |
| SW_N3_to_Arnish | N/A | N/A | |
| SW_NE1a_to_Shetland | N/A | N/A | |
| SW_NE1b_to_Shetland | N/A | N/A | |
| SW_NE1c_to_Shetland | N/A | N/A | |
| SW_NE3_to_New_Deer_2 | N/A | N/A | |
| SW_NE4_to_New Deer | N/A | N/A | |
| SW_NE6_to_Peterhead 2 | N/A | N/A | |
| SW_NE7_to_Peterhead DCSS | N/A | N/A | |
| SW_NE8_to_Peterhead 1 | N/A | N/A | |
| Aspen_to_Beech | N/A | N/A | |
| Aspen_to_Fetteresso | N/A | N/A | |
| Beech_to_Beech MPI | N/A | N/A | |
| Beech_to_Cedar | N/A | N/A | |
| Cedar_to_Aspen | N/A | N/A | |
| Cedar_to_Branxton | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| North Connect_to_Cenos | N/A | N/A | |
| Peterhead_to_Cenos | N/A | N/A | |
| Scaraben_to_Peterhead_2 | N/A | N/A | |
| Sinclair_to_Scaraben | N/A | N/A | |
| PDA3_to_Pyworthy | N/A | N/A | |
| PDA2_to_South_Wales_Connection_Node | N/A | N/A | |

# Potential effects due to subsea cable thermal emissions

Both high-voltage alternating currents (HVAC) and HVDC submarine power cables have been shown to generate and dissipate heat when active, reaching cable surface temperatures of up to 70°C (Emeana, *et al.*, 2016). Such heat has the potential to cause sediment dwelling and demersal mobile organisms to move away from the affected area. Increased heat may also alter physio-chemical conditions and bacterial activity in surrounding sediments, contributing to altered faunal composition and localised ecological shifts (Meissner, *et al.*, 2008). While the full effect of temperature changes on sediment composition and related biogeochemical cycling are unknown, preliminary studies have indicated shifts in bacterial community composition with increased temperatures, with corresponding changes in $NH_4$ concentration and nitrogen cycling (Hicks, *et al.*, 2018).

Sediment particle size composition has been found to influence heat transfer, with coarse silts experiencing the greatest temperature change, but to a shorter distance from the source, while fine and coarse sands had a lower temperature change but a greater affected distance (Emeana, *et al.*, 2016). Therefore, although effects will occur along the full length of the cable; these would be localised to a few metres from the cable, dependent upon the heat carrying capacity of the particular sediments surrounding each cable.

Increased sediment temperature has the potential to affect infaunal species and assemblages directly. However, whilst the sediment surrounding the cable may be heated there is negligible capability to heat the overlying water column because of the very high heat capacity of water (OSPAR, 2023), meaning there would be no effects on epibenthic communities.

The overall ZoI is therefore considered to be moderate in size due to the relatively discrete area over which this impact pathway will affect benthic ecology, however thermal effects are considered negligible. Furthermore, species inhabiting this part of the sediment experience natural variations greater than that produced by the cables and are therefore likely to be tolerant of temperature changes (e.g. Hiscock, 2008; Jackson, 2008). The assessment is provided in **Table 11**.

## Mitigation

The following measures have the potential to avoid and/or reduce the impact of thermal emissions on marine receptors:

- Raise the priority of environmental considerations to an equal footing with other, more-traditional considerations at this strategic level, such as avoiding designated sites, and the need to cross third-party infrastructure, as far as possible;
- Detailed route development and micro-routeing within the study corridor, informed by pre-installation evaluation of site-specific survey data to avoid or

minimise localised engineering and environmental constraints, including minimising the footprint as much as possible; and

- Consideration of the need for thermal modelling, to inform design.

## Table 11: Assessment of the potential effects due to subsea cable thermal emissions to have an AEoSI

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | These sites were screened in as they are designated for benthic features and the associated study corridors running directly through their boundaries.<br>The level of thermal emissions produced by a buried HVDC cable is expected to be of a negligible magnitude. Increased sediment temperature has the potential to affect infaunal species and assemblages directly, however because of the very high heat capacity of water there would be no effects on epibenthic communities.<br>As such, the designated features are considered unlikely to be significantly disturbed by the presence of a cable. Therefore, impacts to the extent and quality of habitat features are considered to be negligible and conservation objectives of these site will not be hindered and thus no AEoSI will arise. |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | |
| R4_3_to_Weston_Marsh | Inner Dowsing, Race Bank and North Ridge SAC | Within the HND corridor | |
| | The Wash and North Norfolk Coast SAC | Within the HND corridor | |
| R4_4_to_Bodelwyddan | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | |
| PA_1_to_Birkhill_Wood | Dogger Bank SAC | Within the HND corridor | |
| R4_1_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| R4_2_to_Birkhill Wood | Dogger Bank SAC | Within the HND corridor | |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor | |
| SW_E2a_2_to_Near Richborough | Thanet Coast SAC | Within the HNDFUE corridor | |
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| SW_E1a_to_Hawthorn Pit | N/A | N/A | For these study corridors, no European sites have been |
| SW_NE7_ To_Peterhead | N/A | N/A | |
| SW_NE4_to_New Deer | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_SW_e1b | N/A | N/A | screened into the assessment the impact of thermal emissions. |
| SW_E1a_to_Fiddes | N/A | N/A | |
| Kilmarnock_South_to_Ballantrae | N/A | N/A | |
| SW_N4_to_Arnish_(Lewis) | N/A | N/A | |
| R4_6_to_Penwortham | N/A | N/A | |
| R4_5_to_Penwortham | N/A | N/A | |
| SW_N1_to_Spittal | N/A | N/A | |
| SW_E1a_to_Linconshire Connection Node | N/A | N/A | |
| SW_W1_to_Ballantrae | N/A | N/A | |
| Shetland_to_Blackhillock | N/A | N/A | |
| SW_E1a_to_Branxton | N/A | N/A | |
| SW_E1a_to_SW_E1c_2 | N/A | N/A | |
| SW_E1c_1_to_Lincolnshire Connection Node | N/A | N/A | |
| SW_E1c_1_to_SW_E1c_2 | N/A | N/A | |
| SW_E2a_1_to_SW_E2a_2 | N/A | N/A | |
| SW_E2a_2_to_SW_E1c_1 | N/A | N/A | |
| SW_E2b_to_SW_E2a_1 | N/A | N/A | |
| SW_E2a_2_to_Peterhead 2 | N/A | N/A | |
| SW_E3_to_Fiddes | N/A | N/A | |
| SW_N2_to_Near_Dounreay | N/A | N/A | |
| SW_N3_to_Arnish | N/A | N/A | |
| SW_NE1a_to_Shetland | N/A | N/A | |
| SW_NE1b_to_Shetland | N/A | N/A | |
| SW_NE1c_to_Shetland | N/A | N/A | |
| SW_NE2_to_Spittal | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE3_to_New_Deer_2 | N/A | N/A | |
| SW_NE3_to_New Deer 2 | N/A | N/A | |
| SW_NE6_to_Peterhead 2 | N/A | N/A | |
| SW_NE7_to_Peterhead DCSS | N/A | N/A | |
| SW_NE8_to_Peterhead 1 | N/A | N/A | |
| Aspen_to_Beech | N/A | N/A | |
| Aspen_to_Fetteresso | N/A | N/A | |
| Beech_to_Beech MPI | N/A | N/A | |
| Beech_to_Cedar | N/A | N/A | |
| Cedar_to_Aspen | N/A | N/A | |
| Cedar_to_Branxton | N/A | N/A | |
| North Connect_to_Cenos | N/A | N/A | |
| Peterhead_to_Cenos | N/A | N/A | |
| Scaraben_to_Peterhead_2 | N/A | N/A | |
| Sinclair_to_Scaraben | N/A | N/A | |
| PDA3_to_Pyworthy | N/A | N/A | |
| PDA2_to_South_Wales_Connection_Node | N/A | N/A | |

# Impacts to marine mammals and fish from underwater sound

A number of activities undertaken during the installation of marine cables will generate underwater sound. Sound can be either impulsive or non-impulsive (continuous) in nature. Examples of impulsive sources include sound produced by high-resolution seabed imaging, such as multi-beam echo sounding (MBES) and seismic airguns, impact piling, and explosions. Continuous sound sources, include dredging/trenching and drilling type activities, and sound from vessel movements, including the use of dynamic positioning (DP). The effect of man-made sounds on marine receptors depends on the intensity of the sound source (i.e. the amplitude of the sound pressure wave), the duration of the sound, frequency, the surrounding environment (e.g. water depth) and the sensitivity of the receiving fauna.

For underwater sound impact appraisals, the applied metrics are sound pressure level (SPL) and sound exposure levels (SEL). The SPL is a measure of the amplitude or intensity of a sound and is typically measured as a peak value. In contrast, the SEL is a time-integrated measurement of the sound energy, which takes account of the level of sound as well as the duration over which the sound is present in the marine environment.

The sound characteristics of the marine cable installation activities have been determined based on a significant body of knowledge of many common sound generating activities, for which there is an extensive range of values in the literature (**Table 12**). Where a range of sound source levels was found in the literature a reasonable but realistic worst-case level has been assumed.

### Table 12: Characteristics of underwater sound sources generated by the installation of cables in the marine environment

| Activity | Operating frequency (kHz) | SPL* (dB re 1 Pa@ 1 m) | Reference |
|---|---|---|---|
| Swathe or MBES | 170 – 450 | 221<br>235 (peak) | Genesis Oil and Gas Consultants Ltd, 2011 |
| Side scan sonar (SSS) (e.g. EdgeTech 4200 Series) | 300 – 600 | 210 – 226 | Genesis Oil and Gas Consultants Ltd, 2011; Equipment specification sheet |
| SBP (e.g. Innomar SES-2000, Edgetech Chirp & Applied Acoustics 201 boomer) | 0.5 – 12 | 238 | Equipment specification sheets |
| USBL (e.g. Kongsberg HiPAP 502) | 21 – 31 | 207 | Equipment specification sheet |
| Cable installation (jetting, trenching | 1 – 15 | 178 | Nedwell, Langworthy, & D., 2003; |

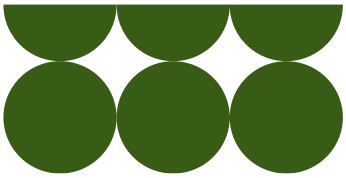
| Activity | Operating frequency (kHz) | SPL* (dB re 1 Pa@ 1 m) | Reference |
|---|---|---|---|
| | | | EGS Survey Group, 2018 |
| Rock placement | N/A | < Vessel sound level | Nedwell, Brooker, & Barham, 2012 |
| HDD (break-out) | N/A | 129.5 | Nedwell, Brooker, & Barham, 2012 |
| Cable lay vessel (~ 140 m in length operating with DP) | 0.005 – 3.2 | 180 – 197 | AT&T, 2008; Ross, 1993 |
| Project support vessels including medium (50-100 m) and small (<50) boats | Low to high frequency | 160 – 180 | Genesis Oil and Gas Consultants Ltd, 2011; Richardson, *et al.* (1995); OSPAR commission (2009) |
| UXO explosions – assumed 55 kg and 100 kg charge weight as worst-case scenario | - | 289 (peak) | Soloway & Dahl, 2014 |
| **SPL metrics in rms unless indicated* | | | |

A number of the above sound sources may be scoped out of the appraisals undertaken at the individual project level. These are sources which typically produce sound at frequencies outside of the hearing range of marine mammals and fish, are masked[13] by other elements of the installation operations (such as sound from vessel engines, ploughing or jetting), or are not expected to materially elevate received sound levels above prevailing ambient conditions in areas characterised by existing vessel activity (see Sinclair et al., 2023). At this plan level, detailed baseline characterisation and project-specific noise modelling are not available; such assessments will be undertaken at project stage where source parameters, duration and location are defined. Of relevance to disturbance impacts is the Defra Noise Policy package 2025, which aims to reduce the impact of noise on marine environments and marine life. It includes a UXO Joint position Statement including information for carrying out Habitats Regulations Assessment.

At this strategic stage, construction methodologies for individual cable routes are not defined and there is no confirmed requirement for Unexploded Ordnance (UXO) clearance. The risk of UXO explosion, and any associated surveys or clearance activities are typically addressed in a separate, project-specific assessment processes. Accordingly, UXO clearance has not been assessed within this Plan-level HRA assessment.

Where required, UXO clearance has the potential to generate impulsive sound with disturbance ranges that may exceed those associated with geophysical survey activities, depending on the clearance technique adopted (e.g. high-order or low-order methods and the use of noise abatement). In a high-order detonation worst-case scenario without mitigation, the Effective Deterrent Range (EDR) may extend to approximately 20 km. Any UXO survey or clearance works would therefore be subject to detailed project-level HRA,

[13] Masking refers to the occurrence of anthropogenic noises overlapping in frequency and / or time with biologically important sounds, making it difficult or impossible for marine animals to hear those sounds.



informed by site-specific survey data and based on the proposed methodology and appropriate worst-case scenario, in line with relevant best practice guidance.

With regard to subsea cable installation, there are key activities that are within the hearing range of marine mammals and fish and therefore have the potential to have adverse effects on these receptors. These activities comprise the operation of SBP the acoustic positioning systems (USBL).

With regard to fish sensitivity, shad species, including protected Allis and Twaite shad, are very sensitive to noise and have been shown to be capable of detecting sounds above 1kHz (see Plachta and Popper 2003).

## Marine mammals

Marine mammals use sound for communication, to locate mates, to search for prey, to avoid predators and hazards, and in the case of cetaceans, for short- and long-range navigation (Tyack, 1998; OSPAR, 2009). Man made sound sources have the potential to affect marine mammals where the frequency of the sound generated is within a species auditory range.

To reflect the different hearing sensitivities of species (**Table 13**) marine mammals have been classified into different functional hearing groups (Southall *et al.*, 2007; NMFS, 2024; Southall *et al.*, 2019).

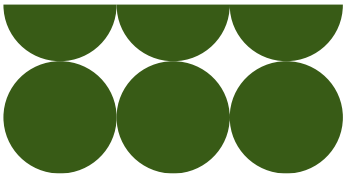
### Table 13: Hearing sensitivity of marine mammals

| Marine mammal hearing group | Relevant key species | Estimated auditory bandwidth |
|---|---|---|
| Low frequency cetacean | Minke whale | 7 Hz to 36 kHz |
| High frequency cetacean | Bottlenose dolphin, short-beaked common dolphin, and Risso's dolphin | 150 Hz to 160 kHz |
| Very High frequency cetacean | Harbour porpoise | 200 Hz to 165 kHz |
| Phocid pinnipeds in water | Grey seal and harbour seal | 40 Hz to 90 kHz |

The impact of underwater sound in marine mammals is generally split into impacts on hearing and behavioural responses. Auditory effects from underwater sound exposure are either a permanent or temporary change in hearing sensitivity, or threshold shift (permanent threshold shift (PTS) and temporary threshold shift (TTS), respectively), as a consequence of damage to the inner ear of marine mammals.

The most up to date sound exposure criteria for auditory injury in marine mammals have been published by the US National Marine Fisheries Service (NMFS), often referred to as the NOAA criteria (NMFS, 2024).

The threshold criteria for impulsive sound sources are SPL which is a means of characterizing the peak amplitude of a sound. The threshold criteria for continuous sound sources are for SEL (**Table 14**), which is a measure of energy that considers both received level and the duration of exposure. This implies that sounds received at lower levels for a longer duration may have similar effects as sounds received at higher levels for a shorter duration.



## Table 14: Sound pressure levels relevant to marine mammals

| Marine mammal hearing group | Impulsive sound sources | | | | Continuous sound sources | |
|---|---|---|---|---|---|---|
| | PTS | | TTS | | PTS | TTS |
| | SPLpeak | SELcum | SPLpeak | SELcum | SELcum | SELcum |
| Low Frequency Cetaceans | 219 | 183 | 213 | 168 | 199 | 179 |
| High Frequency Cetaceans | 230 | 185 | 224 | 170 | 198 | 178 |
| Very High Frequency Cetaceans | 202 | 155 | 196 | 140 | 173 | 153 |
| Phocids in Water | 218 | 185 | 212 | 170 | 201 | 181 |

*Source: Southall et al., 2019*

*Note:*

*SPL thresholds are unweighted and SEL are weighted for marine mammal hearing range. SEL thresholds are in dB re 1 μPa 2s and peak SPL thresholds are in dB re 1 μPa.*

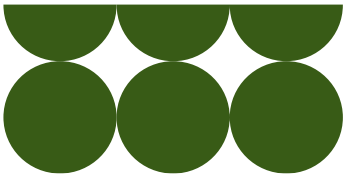
***Marine mammal hearing groups are written as used in Southall et al., 2021, and NMFS, 2024.***

The operation of the SBP and the acoustic positioning system USBL are impulsive sound sources with the potential to cause injury or behavioural disturbance to marine mammals.

SBPs are the source most likely to be audible to marine mammals. It is generally accepted the auditory injury (PTS) is only likely to occur if marine mammals remain within close proximity, probably in the range of several metres, of an impulsive sound source. However, sound exposure over a period of time can accumulate to cause auditory injury (as expressed in the 24-hour cumulative thresholds for the SEL metric). Nevertheless, it is unlikely for highly mobile marine mammals to remain in close proximity to the sound source for a period long enough to result in auditory injury.

Some behavioural disturbance may occur during the operation of the USBL and SBP. There are no widely agreed quantitative thresholds for behavioural disturbance despite major progress being made in this field (Southall *et al.*, 2021). This reflects both a lack of empirical evidence and a high level of variability in behavioural responses which are often unrelated to the sound level received (Gomez *et al.*, 2016). For example, where there is a strong motivation to remain in an area, or there is a high level of habituation to man-made underwater sound, such as shipping lanes, animals may not demonstrate observable avoidance behaviour (Gomez *et al.*, 2016).

The harbour porpoise is the species with the highest sensitivity to underwater sound, with peak hearing range at higher frequency. Several field studies which include geophysical and seismic surveys, have shown that porpoise density and vocalisations are reduced temporarily for several kilometres around the sound source with gradually less of an effect the further away the observations are made (e.g., Lucke *et al.*, 2009; Dähne, 2013; Stone & Tasker, 2006). Other investigations into impact to cetaceans suggest a disturbance range of 5 km for geophysical sound sources (JNCC, 2020; Thompson *et al.*, 2013). These sources are generally highly directional sources with expected low levels of horizontal sound



propagation; many operating at high frequencies and therefore subject to high transmission loss (e.g., Crocker & Fratantonio 2016, Crocker *et al.*, 2018). However, several of these systems also produce medium frequencies likely to propagate longer distances and therefore have the potential to cause disturbance to harbour porpoise and other marine mammals. Due to a lack of data for avoidance behaviour for geophysical sound sources, 5 km is a conservative disturbance zone for all marine mammals, in line with Effective Deterrent Ranges (EDR) for SBP published by JNCC (2020).

To accurately conclude whether any disturbances may be significant, further methodological detail and technical consideration will be necessary for each cable route at project level design.

### Fish and Shellfish

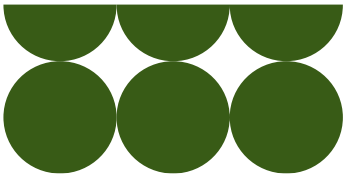
Sound plays a major role in the lives of fish including for communication, locating prey and avoiding predators (Fay & Popper, 2000). Sound is perceived by fish through the ears and the lateral line (the hocoena-lateralis system) which is sensitive to vibration. In addition, some species of teleost or bony fish have a gas filled sack called a swim bladder that can also be used for sound detection (Hawkins, 1993).

The potential impacts of sound on fish are largely determined by the physiology of fish, particularly the presence or absence of a swim bladder and the potential for the swim bladder to improve the hearing sensitivity and range of hearing (Popper, *et al.*, 2014). These morphological features have been used to develop categories of fish depending on how they might be affected by sounds, and these can be used when appraising impacts. For most fish, sound above 1 kHz is not audible. Fish have been grouped into the following three categories of hearing sensitivity to underwater sound as described below:

- *High hearing sensitivity fish* – species in which hearing involves a swim bladder or other gas volume (e.g. Atlantic cod, herring and relatives). These species are susceptible to barotrauma and detect sound pressure as well as particle motion and includes Atlantic cod, herring and other species of the Clupidae family;
- *Medium hearing sensitivity fish* – species with swim bladders in which hearing does not involve the swim bladder or other gas volume (e.g. Atlantic salmon, sea trout and European eel). These species are susceptible to barotrauma although hearing only involves particle motion, not sound pressure. Atlantic salmon, sea trout and European eel are included in this category; and
- *Low hearing sensitivity fish* – species with no swim bladder or other gas chamber are less susceptible to barotrauma detecting particle motion rather than sound pressure. This group includes flatfish and elasmobranchs.

Potential effects of underwater sound vary with the level and character of the sound produced and the distance of receptor from source and can be broadly categorised as follows:

- *Physical or physiological effects* – this includes mortality, non-recoverable and recoverable injury. Only in extreme cases, such as where fish are in close proximity to very high sound pressure levels, such as UXO detonations, is underwater sound likely to cause physical injury, including barotrauma such as rupturing of the swim



bladder and subsequent death. Recoverable injuries such as haematomas, capillary dilation, and loss of sensory hair cells may still lead to death if they decrease fitness, and the animal is subject to predation or disease. Sudden changes in pressure are more likely to result in damage than are gradual changes (Popper *et al.*, 2014);

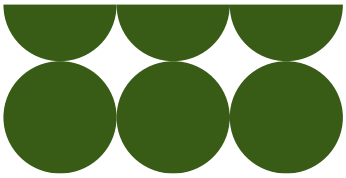
- *Auditory damage* – high intensity underwater sound can cause physical damage to the auditory system structures such as the inner ear, sensory hair cells and otoliths (Parvin & Nedwell, 2006). This can be either a TTS which is a reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range; or PTS which is an irreversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range;
- *Masking* – caused by interference with ecologically significant sounds and relates to behavioural responses. Some fish are known to use auditory cues, such as juvenile fish selecting healthy reef habitats on the basis of their sound signature but the consequences of masking for fish are still not well understood; and
- *Behavioural responses* – includes changes in movements, swimming direction, migration, feeding, breeding and displacement.

For most fish, sensitivity to sound occurs from below 100 Hz to several hundred hertz, or in a very few species, up to several thousand hertz (Popper, *et al.*, 2014). Those species with a swim bladder are sound pressure sensitive at the higher frequencies, and some species of herring-like fishes (but not Atlantic herring) can detect sounds above 20 kHz (ultrasound) (Popper, *et al.*, 2014).

SBP operate at frequencies <1 kHz and so are within the hearing range of fish. However, based on Popper *et al.*'s (2014), threshold criteria for mid-frequency sonar (a proxy for SBP), and standard geometric spreading calculations, the distance at which injury and behavioural disturbance could occur for medium and high sensitivity fish is within tens of metres. This is considered a conservative estimate as no injury or effect to the ear or non-auditory tissues has been observed at the sound pressures comparable to SBPs, with the observed effects beginning at higher sound levels than tested to date (Halvorsen & Zeddies, 2011). Thus, in any impact would be localised, temporary and reversible, resulting in a negligible magnitude of effect. The assessment is presented in **Table 15.**

**Unexploded ordinance**

At this strategic stage, construction methodologies for individual cable routes are not defined and there is no confirmed OXO clearance. UXO risk and any associated survey or clearance works are typically addressed through separate project-level assessment and licensing processes. If required, the potential effects (including underwater sound and associated disturbance ranges) will be assessed in detail at project level based on the proposed methodology and appropriate worst-case scenario, in line with relevant best practice guidance.



## Mitigation

The following measures have the potential to avoid and/or reduce the impact of underwater sound on marine receptors. Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar:

- Raise the priority of environmental considerations to an equal footing with other, more-traditional considerations at this strategic level, such as avoiding designated sites, and the need to cross third-party infrastructure, as far as possible;
- Consideration of the JNCC guidelines for minimising the risk of injury to marine mammals from geophysical surveys (JNCC, 2017);
- Refer to and draw upon the Defra Noise Policy package 2025, which aims to reduce the impact of noise on marine environments and marine life;
- Consideration of the need for underwater sound modelling, to inform design; and
- Consideration of effective deterrent ranges (EDR)(JNCC, 2020) and noise disturbance reccommendatons (Sinclair *et al.,* 2023) for marine mammals at project-level (JNCC, 2020);
- Consideration of the need for Marine Mammal Observation.

As detailed in Natural England's best practice guidance (Parker *et al*., 2022) it is advised that a Marine Mammal Management Plan (MMMP) is submitted alongside Development Consent Order (DCO) applications; detailing the mitigation measures implemented as part of any project where marine mammals may be affected.

## Table 15: Assessment on the potential impacts to marine mammals and fish from underwater sound to have an AEoSI

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | North Anglesey Marine / Gogledd Môn Forol SAC | Within the HND corridor | These sites are designated for harbour porpoise (*Phocoena phocoena*) which has a high sensitivity to underwater sound. This cable route traverses the boundary of these SACs. Conservatively, the disturbance zone for harbour porpoise from geophysical sound sources (the most injurious sound source from cable installation works to marine mammals) is 5 km.<br>To accurately conclude whether any disturbances may be significant, further methodology and technical considerations will be necessary for assessment at the project level.<br>However, it should be noted that marine mammals are likely to actively avoid underwater sound sources, and mitigation measures including soft starts can be implemented, to address any AEoSI. |
| R4_3_to_Weston_Marsh | Southern North Sea SAC | Within the HND corridor | |
| SW_N4_to_Arnish_(Lewis) | Inner Hebrides and the Minches SAC | Within the HND corridor | |
| PA_1_to_Birkhill_Wood | Southern North Sea SAC | Within the HND corridor | |
| R4_1_to_Birkhill Wood | Southern North Sea SAC | Within the HND corridor | |
| R4_2_to_Birkhill Wood | Southern North Sea SAC | Within the HND corridor | |
| SW_E1a_to_Linconshire Connection Node | Southern North Sea SAC | Within the HND corridor | |
| SW_E1c_1_to_Lincolnshire Connection Node | Southern North Sea SAC | Within the HNDFUE corridor | |
| SW_E1c_2_to_Weston Marsh | Southern North Sea SAC | Within the HNDFUE corridor | |
| SW_E2a_2_to_Near Richborough | Southern North Sea SAC | Within the HNDFUE corridor | |
| SW_N3_to_Arnish | Inner Hebrides and the Minches SAC | Within the HNDFUE corridor | |
| PDA1_to_Llandyfaelog | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | Within the Celtic Sea corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| PDA2_to_South_Wales_Connection_Node | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| PDA3_to_Pyworthy | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| Ballantrae_to_Pentir | West Wales Marine/Gorllewin Cymru Forol SAC | 62 km | These sites are designated for harbour porpoise (*Phocoena phocoena*), a highly mobile species susceptible to underwater noise.<br>Conservatively, the disturbance zone for harbour porpoise from geophysical sound sources (the most injurious sound source from cable installation works to marine mammals) is 5 km.<br>The study corridors are more than 5 km from the site and should industry best practice installation methods and JNCC guidelines be followed, it is anticipated that any porpoises would show avoidance behaviour if passing through the vicinity of the study corridor during installation.<br>Therefore, impacts to size and distribution of the harbour porpoise populations are considered to be avoidable at the project level and thus no AEoSI has been concluded. |
| | Inner Hebrides and the Minches SAC | 70 km | |
| | Bristol Channel Approaches SAC | 145 km | |
| PA_2_ to_Berwick_Bank | Southern North Sea SAC | 139 km | |
| SW_E1a_to_Hawthorn Pit | Southern North Sea SAC | 101 km | |
| **SW_NE7_** To_Peterhead | Southern North Sea SAC | 265 km | |
| SW_NE4_to_New Deer | Southern North Sea SAC | 265 km | |
| SW_E1a_to_SW_e1b | Southern North Sea SAC | 137 km | |
| SW_E1a_to_Fiddes | Southern North Sea SAC | 137 km | |
| Kilmarnock_South_to_Ballantrae | Inner Hebrides and the Minches SAC | 58 km | |
| | North Channel SAC | 43 km | |
| R4_6_to_Penwortham | North Anglesey Marine/Gogledd Môn Forol SAC | 37 km | |
| | North Channel SAC | 70 km | |
| | West Wales Marine / Gorllewin Cymru Forol SAC | 118 km | |
| | Bristol Channel and Approaches SAC | 240 km | |
| R4_4_to_Bodelwyddan | North Anglesey Marine/Gogledd Môn Forol SAC | 11 km | |
| | West Wales Marine / Gorllewin Cymru Forol SAC | 65 km | |
| | North Channel SAC | 89 km | |
| | Bristol Channel and Approaches SAC | 185 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| R4_5_to_Penwortham | North Anglesey Marine/Gogledd Môn Forol SAC | 52 km | |
| | North Channel SAC | 93 km | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | 118 km | |
| | Bristol Channel and Approaches SAC | 240 km | |
| SW_N1_to_Spittal | Inner Hebrides and the Minches SAC | 102 km | |
| SW_W1_to_Ballantrae | Inner Hebrides and the Minches SAC | 14 km | |
| | North Channel SAC | 37 km | |
| Shetland_to_Blackhillock | Southern North Sea SAC | 285 km | |
| SW_E1a_to_Branxton | Southern North Sea SAC | 123 km | |
| SW_E1a_to_SW_E1c_2 | Southern North Sea SAC | 123 km | |
| SW_E1c_1_to_SW_E1c_2 | Southern North Sea SAC | 123 km | |
| SW_E2a_1_to_SW_E2a_2 | Southern North Sea SAC | 173 km | |
| SW_E2a_2_to_SW_E1c_1 | Southern North Sea SAC | 145 km | |
| SW_E2b_to_SW_E2a_1 | Southern North Sea SAC | 205 km | |
| SW_E2b_to_Peterhead 2 | Southern North Sea SAC | 212 km | |
| SW_E3_to_Fiddes | Southern North Sea SAC | 192 km | |
| SW_N2_to_Near_Dounreay | Inner Hebrides and the Minches SAC | 54 km | |
| SW_NE2_to_Spittal | Southern North Sea SAC | 389 km | |
| SW_NE3_to_New Deer 2 | Southern North Sea SAC | 265 km | |
| SW_NE4_to_New Deer | Southern North Sea SAC | 266 km | |
| SW_NE6_to_Peterhead 2 | Southern North Sea SAC | 264 km | |
| SW_NE7_to_Peterhead DCSS | Southern North Sea SAC | 254 km | |
| SW_NE8_to_Peterhead 1 | Southern North Sea SAC | 262 km | |
| Aspen_to_Beech | Southern North Sea SAC | 260 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Aspen_to_Fetteresso | Southern North Sea SAC | 230 km | |
| Beech_to_Beech MPI | Southern North Sea SAC | 272 km | |
| Beech_to_Cedar | Southern North Sea SAC | 170 km | |
| Cedar_to_Aspen | Southern North Sea SAC | 166 km | |
| Cedar_to_Branxton | Southern North Sea SAC | 119 km | |
| North Connect_to_Cenos | Southern North Sea SAC | 187 km | |
| Peterhead_to_Cenos | Southern North Sea SAC | 169 km | |
| Scaraben_to_Peterhead_2 | Southern North Sea SAC | 262 km | |
| Sinclair_to_Scaraben | Southern North Sea SAC | 315 km | |
| PDA1_to_Llandyfaelog | North Anglesey Marine/Gogledd Môn Forol SAC | 150 km | |
| | North Channel SAC | 272 km | |
| PDA2_to_South_Wales_Connection_Node | West Wales Marine/Gorllewin Cymru Forol SAC | 15 km | |
| | North Anglesey Marine/Gogledd Môn Forol SAC | 184 km | |
| | North Channel SAC | 305 km | |
| PDA3_to_Pyworthy | West Wales Marine/Gorllewin Cymru Forol SAC | 41 km | |
| | North Anglesey Marine/Gogledd Môn Forol SAC | 232 km | |
| | North Channel SAC | 342 km | |
| Ballantrae_to_Pentir | Pen Llyn a`r Sarnau/ Lleyn Peninsula and the Sarnau SAC | 8 km | These sites are designated for bottlenose dolphin (*Tursiops truncatus*), a highly mobile species. Conservatively, the disturbance zone for all |
| | Cardigan Bay/ Bae Ceredigion SAC | 167 km | |
| PA_2_ to_Berwick_Bank | Moray Firth SAC | 178 km | |
| R4_3_to_Weston_Marsh | Moray Firth SAC | 544 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_Hawthorn Pit | Moray Firth SAC | 189 km | marine mammals from geophysical sound sources (the most injurious sound source from cable installation works to marine mammals) is 5 km.<br>These sites are located greater than 5 km from any cable route and therefore it is considered that any individual animals associated with this site are likely to actively avoid the study corridor whilst foraging.<br>Therefore, impacts to size and distribution of bottlenose dolphin populations are considered to be avoidable at the project level and thus no AEoSI has been concluded. |
| SW_NE7_ To_Peterhead | Moray Firth SAC | 180 km | |
| SW_NE4_to_New Deer | Moray Firth SAC | 40 km | |
| SW_E1a_to_SW_e1b | Moray Firth SAC | 174 km | |
| SW_E1a_to_Fiddes | Moray Firth SAC | 109 km | |
| R4_6_to_Penwortham | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 110 km | |
| | Cardigan Bay/ Bae Ceredigion SAC | 167 km | |
| R4_4_to_Bodelwyddan | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 43 km | |
| | Cardigan Bay/ Bae Ceredigion SAC | 110 km | |
| R4_5_to_Penwortham | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 95 km | |
| | Cardigan Bay/ Bae Ceredigion SAC | 167 km | |
| SW_N1_to_Spittal | Moray Firth SAC | 40 km | |
| PA_1_to_Birkhill Wood | Moray Firth SAC | 448 km | |
| R4_1_to_Birkhill Wood | Moray Firth SAC | 444 km | |
| R4_2_to_Birkhill Wood | Moray Firth SAC | 448 km | |
| SW_E1a_to_Lincolnshire Connection Node | Moray Firth SAC | 189 km | |
| Shetland_to_Blackhillock | Moray Firth SAC | 9 km | |
| SW_E1a_to_Branxton | Moray Firth SAC | 189 km | |
| SW_E1a_to_SW_E1c_2 | Moray Firth SAC | 189 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Moray Firth SAC | 198 km | |
| SW_E1c_1_to_SW_E1c_2 | Moray Firth SAC | 198 km | |
| SW_E1c_2_to_Weston Marsh | Moray Firth SAC | 222 km | |
| SW_E2a_1_to_SW_E2a_2 | Moray Firth SAC | 206 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E2a_2_to_Near Richborough | Moray Firth SAC | 214 km | |
| SW_E2a_2_to_SW_E1c_1 | Moray Firth SAC | 214 km | |
| SW_E2b_to_SW_E2a_1 | Moray Firth SAC | 166 km | |
| SW_E2a_2_to_Peterhead 2 | Moray Firth SAC | 82 km | |
| SW_E3_to_Fiddes | Moray Firth SAC | 106 km | |
| SW_N2_to_Near_Dounreay | Moray Firth SAC | 47 km | |
| SW_NE3_to_New_Deer_2 | Moray Firth SAC | 60 km | |
| SW_NE4_to_New Deer | Moray Firth SAC | 41 km | |
| SW_NE7_to_Peterhead DCSS | Moray Firth SAC | 83 km | |
| Aspen_to_Beech | Moray Firth SAC | 180 km | |
| Aspen_to_Fetteresso | Moray Firth SAC | 101 km | |
| Beech_to_Beech MPI | Moray Firth SAC | 291 km | |
| Beech_to_Cedar | Moray Firth SAC | 236 km | |
| Cedar_to_Aspen | Moray Firth SAC | 179 km | |
| Cedar_to_Branxton | Moray Firth SAC | 215 km | |
| North Connect_to_Cenos | Moray Firth SAC | 278 km | |
| Peterhead_to_Cenos | Moray Firth SAC | 90 km | |
| Scaraben_to_Peterhead_2 | Moray Firth SAC | 82 km | |
| Sinclair_to_Scaraben | Moray Firth SAC | 104 km | |
| PDA1_to_Llandyfaelog | Cardigan Bay/Bae Ceredigion SAC | 40 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 67 km | |
| PDA3_to_Pyworthy | Cardigan Bay/Bae Ceredigion SAC | 108 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 150 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND or HNDFUE corridor | These sites are designated for grey seal (*Halichoerus grypus*), which have a maximum foraging range of 448 km. Conservatively, the disturbance zone for all marine mammals from geophysical sound sources (the most injurious sound source associated with cable installation works to marine mammals) is 5 km.<br>These sites are all located within 5 km of a study corridor, or worst case, the study corridor directly traverses the site.<br>To accurately conclude whether any disturbances may be significant, further methodology and technical consideration will be necessary to inform the assessment at the project level.<br>However, it should be noted that marine mammals are likely to actively avoid underwater sound sources, and mitigation measures including soft starts can be implemented to address any effect on the integrity of the site. |
| SW_E1a_to_Linconshire Connection Node | Humber Estuary SAC | 5 km | |
| SW_E1a_to_Branxton | Berwickshire and North Northumberland Coast SAC | 3 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Humber Estuary SAC | 4 km | |
| Cedar_to_Branxton | Berwickshire and North Northumberland Coast SAC | 2 km | |
| PDA1_to_Llandyfaelog | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Pen Llyn a`r Sarnau/ Lleyn Peninsula and the Sarnau SAC | 8 km | These sites are designated for grey seal (*Halichoerus grypus*), which have a maximum foraging range of 448 km.<br>Conservatively, the disturbance zone for all marine mammals from geophysical sound sources (the most injurious sound source to marine mammals associated with cable installation works) is 5 km.<br>The sites are located greater than 5 km from any cable route and therefore it is considered that any individual animals associated with these sites are likely to actively avoid the area.<br>Therefore, impacts to size and distribution of the grey seal populations are considered to be avoidable at the project level and thus no AEoSI has been concluded. |
| | The Maidens SAC | 20 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 128 km | |
| | Cardigan Bay/ Bae Ceredigion SAC | 167 km | |
| PA_2_ to_Berwick_Bank | Isle of May SAC | 48 km | |
| R4_3_to_Weston_Marsh | Humber Estuary SAC | 13 km | |
| SW_E1a_to_Hawthorn Pit | Berwickshire and North Northumberland Coast SAC | 30 km | |
| | Isle of May SAC | 110 km | |
| SW_NE7_ To_Peterhead | Isle of May SAC | 147 km | |
| | Berwickshire and North Northumberland Coast SAC | 174 km | |
| SW_NE4_to_New Deer | Isle of May SAC | 143 km | |
| SW_E1a_to_SW_e1b | Isle of May SAC | 113 km | |
| SW_E1a_to_Fiddes | Berwickshire and North Northumberland Coast SAC | 30 km | |
| | Isle of May SAC | 68 km | |
| Kilmarnock_South_to_Ballantrae | The Maidens SAC | 40 km | |
| SW_N4_to_Arnish_(Lewis) | North Rona SAC | 90 km | |
| | Monach Islands SAC | 98 km | |
| R4_6_to_Penwortham | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 110 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 167 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 235 km | |
| R4_4_to_Bodelwyddan | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 43 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Cardigan Bay/Bae Ceredigion SAC | 110 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 182 km | |
| R4_5_to_Penwortham | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 95 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 167 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 230 km | |
| SW_N1_to_Spittal | Faray and Holm of Faray SAC | 76 km | |
| | North Rona SAC | 94 km | |
| PA_1_to_Birkhill_Wood | Humber Estuary SAC | 6 km | |
| R4_1_to_Birkhill Wood | Humber Estuary SAC | 6 km | |
| R4_2_to_Birkhill Wood | Humber Estuary SAC | 6 km | |
| SW_E1a_to_Linconshire Connection Node | Berwickshire and North Northumberland Coast SAC | 72 km | |
| | Isle of May SAC | 114 km | |
| SW_W1_to_Ballantrae | The Maidens SAC | 21 km | |
| | Treshnish Isles SAC | 50 km | |
| Shetland_to_Blackhillock | Faray and Holm of Faray SAC | 65 km | |
| SW_E1a_to_Branxton | Isle of May SAC | 19 km | |
| SW_E1a_to_SW_E1c_2 | Isle of May SAC | 111 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Berwickshire and North Northumberland Coast SAC | 71 km | |
| | Isle of May SAC | 128 km | |
| SW_E1c_1_to_SW_E1c_2 | Isle of May SAC | 138 km | |
| SW_E1c_2_to_Weston Marsh | Humber Estuary SAC | 7 km | |
| | Berwickshire and North Northumberland Coast SAC | 77 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Isle of May SAC | 141 km | |
| SW_E2a_1_to_SW_E2a_2 | Isle of May SAC | 200 km | |
| SW_E2a_2_to_Near Richborough | Humber Estuary SAC | 117 km | |
| | Berwickshire and North Northumberland Coast SAC | 143 km | |
| | Isle of May SAC | 200 km | |
| SW_E2a_2_to_SW_E1c_1 | Isle of May SAC | 138 km | |
| SW_E2b_to_SW_E2a_1 | Isle of May SAC | 180 km | |
| SW_E2b_to_Peterhead 2 | Isle of May SAC | 149 km | |
| SW_E3_to_Fiddes | Isle of May SAC | 67 km | |
| | Berwickshire and North Northumberland Coast SAC | 92 km | |
| SW_N2_to_Near_Dounreay | North Rona SAC | 29 km | |
| | Faray and Holm of Faray SAC | 84 km | |
| SW_N3_to_Arnish | North Rona SAC | 90 km | |
| | Monach Islands SAC | 98 km | |
| SW_NE2_to_Spittal | Faray and Holm of Faray SAC | 52 km | |
| SW_NE3_to_New_Deer_2 | Faray and Holm of Faray SAC | 82 km | |
| | Isle of May SAC | 146 km | |
| SW_NE6_to_Peterhead 2 | Isle of May SAC | 149 km | |
| SW_NE7_to_Peterhead DCSS | Isle of May SAC | 149 km | |
| SW_NE8_to_Peterhead 1 | Isle of May SAC | 146 km | |
| Aspen_to_Beech | Faray and Holm of Faray SAC | 220 km | |
| | Isle of May SAC | 220 km | |
| Aspen_to_Fetteresso | Isle of May SAC | 60 km | |
| | Berwickshire and North Northumberland Coast SAC | 72 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Faray and Holm of Faray SAC | 217 km | |
| Beech_to_Beech MPI | Faray and Holm of Faray SAC | 292 km | |
| | Berwickshire and North Northumberland Coast SAC | 315 km | |
| | Isle of May SAC | 316 km | |
| Beech_to_Cedar | Berwickshire and North Northumberland Coast SAC | 206 km | |
| | Isle of May SAC | 216 km | |
| | Faray and Holm of Faray SAC | 296 km | |
| Cedar_to_Aspen | Berwickshire and North Northumberland Coast SAC | 207 km | |
| | Isle of May SAC | 218 km | |
| | Faray and Holm of Faray SAC | 219 km | |
| Cedar_to_Branxton | Isle of May SAC | 21 km | |
| | Faray and Holm of Faray SAC | 320 km | |
| North Connect_to_Cenos | Berwickshire and North Northumberland Coast SAC | 250 km | |
| | Isle of May SAC | 260 km | |
| | Faray and Holm of Faray SAC | 320 km | |
| Peterhead_to_Cenos | Isle of May SAC | 145 km | |
| | Berwickshire and North Northumberland Coast SAC | 167 km | |
| | Faray and Holm of Faray SAC | 194 km | |
| Scaraben_to_Peterhead_2 | Isle of May SAC | 148 km | |
| Sinclair_to_Scaraben | Isle of May SAC | 228 km | |
| PDA1_to_Llandyfaelog | Lundy SAC | 32 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 40 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 67 km | |
| PDA2_to_South_Wales_Connection_Node | Pembrokeshire Marine/Sir Benfro Forol SAC | 9 km | |
| | Lundy SAC | 20 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 69 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 97 km | |
| | Isles of Scilly Complex SAC | 121 km | |
| PDA3_to_Pyworthy | Lundy SAC | 7 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 46 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 108 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 150 km | |
| | Isles of Scilly Complex SAC | 120 km | |
| R4_3_to_Weston_Marsh | The Wash and North Norfolk Coast SAC | Within the HND corridor | This site is designated for harbour seal (*Phoca vitulina*) which have a maximum foraging range of 273 km.<br>These cable routes traverse the boundary of the SAC directly. Conservatively, the |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor. | disturbance zone for all marine mammals from geophysical sound sources (the most likely sound source of the cable installation works to be audible to marine mammals) is 5 km.<br>To accurately conclude whether any disturbances may be significant, further methodological and technical consideration will be necessary for assessment at the project level.<br>However, it should be noted that marine mammals are likely to actively avoid underwater sound sources, and mitigation measures including soft starts can be implemented, to address any effect on the integrity of the site. |
| Ballantrae_to_Pentir | Strangford Lough SAC | 34 km | These sites are designated for harbour seal (*Phoca vitulina*), which have a maximum foraging range of 273 km.<br>Conservatively, the disturbance zone for all marine mammals from geophysical sound sources (the most injurious sound source to marine mammals |
| | Murlough SAC | 46 km | |
| | South-East Islay Skerries SAC | 80 km | |
| PA_2_ to_Berwick_Bank | Firth of Tay and Eden Estuary SAC | 55 km | |
| SW_E1a_to_Hawthorn Pit | Firth of Tay and Eden Estuary SAC | 111 km | |
| SW_NE7_ To_Peterhead | Firth of Tay and Eden Estuary SAC | 112 km | |
| SW_NE4_to_New Deer | Dornoch Firth and Morrich More SAC | 76 km | |
| | Firth of Tay and Eden Estuary SAC | 121 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_SW_e1b | Firth of Tay and Eden Estuary SAC | 111 km | associated with the cable installation works) is 5 km.<br>The sites are located greater than 5 km from any cable route and therefore it is considered that any individual animals associated with these sites are likely to actively avoid the area.<br>Therefore, impacts to size and distribution of the harbour seal populations are considered to be avoidable at the project level and thus no AEoSI has been concluded. |
| SW_E1a_to_Fiddes | Firth of Tay and Eden Estuary SAC | 46 km | |
| Kilmarnock_South_to_Ballantrae | Skerries and Causeway SAC | 77 km | |
| | South-East Islay Skerries SAC | 77 km | |
| SW_N4_to_Arnish_(Lewis) | Ascrib, Isay and Dunvegan SAC | 63 km | |
| | Sound of Barra SAC | 130 km | |
| SW_N1_to_Spittal | Dornoch Firth and Morrich More SAC | 72 km | |
| | Sanday SAC | 86 km | |
| PA_1_to_Birkhill_Wood | The Wash and North Norfolk Coast SAC | 88 km | |
| R4_1_to_Birkhill Wood | The Wash and North Norfolk Coast SAC | 88 km | |
| R4_2_to_Birkhill Wood | The Wash and North Norfolk Coast SAC | 88 km | |
| SW_E1a_to_Linconshire Connection Node | The Wash and North Norfolk Coast SAC | 15 km | |
| | Firth of Tay and Eden Estuary SAC | 111 km | |
| SW_W1_to_Ballantrae | South-East Islay Skerries SAC | 16 km | |
| | Eileanan agus Sgeiran Lios mor SAC | 81 km | |
| | Murlough SAC | 102 km | |
| Shetland_to_Blackhillock | Mousa SAC | 9 km | |
| | Yell Sound Coast SAC | 9 km | |
| | Dornoch Firth and Morrich More SAC | 38 km | |
| | Sanday SAC | 208 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | The Wash and North Norfolk Coast SAC | 15 km | |
| | Firth of Tay and Eden Estuary SAC | 135 km | |
| SW_E1c_1_to_SW_E1c_2 | Firth of Tay and Eden Estuary SAC | 136 km | |
| SW_E1c_2_to_Weston Marsh | Firth of Tay and Eden Estuary SAC | 148 km | |
| SW_E2a_1_to_SW_E2a_2 | Firth of Tay and Eden Estuary SAC | 193 km | |
| SW_E2a_2_to_Near Richborough | The Wash and North Norfolk Coast SAC | 104 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Firth of Tay and Eden Estuary SAC | 193 km | |
| SW_E2a_2_to_SW_E1c_1 | Firth of Tay and Eden Estuary SAC | 134 km | |
| SW_E2b_to_SW_E2a_1 | Firth of Tay and Eden Estuary SAC | 163 km | |
| SW_E2b_to_Peterhead 2 | Firth of Tay and Eden Estuary SAC | 120 km | |
| SW_E3_to_Fiddes | Firth of Tay and Eden Estuary SAC | 40 km | |
| SW_N2_to_Near_Dounreay | Dornoch Firth and Morrich More SAC | 75 km | |
| | Sanday SAC | 93 km | |
| SW_N3_to_Arnish | Ascrib, Isay and Dunvegan SAC | 63 km | |
| | Sound of Barra SAC | 130 km | |
| SW_NE1a_to_Shetland | Yell Sound Coast SAC | 9 km | |
| | Mousa SAC | 26 km | |
| SW_NE1b_to_Shetland | Yell Sound Coast SAC | 9 km | |
| | Mousa SAC | 27 km | |
| SW_NE1c_to_Shetland | Yell Sound Coast SAC | 9 km | |
| | Mousa SAC | 27 km | |
| SW_NE2_to_Spittal | Sanday SAC | 44 km | |
| | Dornoch Firth and Morrich More SAC | 74 km | |
| SW_NE3_to_New_Deer_2 | Dornoch Firth and Morrich More SAC | 96 km | |
| | Firth of Tay and Eden Estuary SAC | 115 km | |
| SW_NE4_to_New Deer | Dornoch Firth and Morrich More SAC | 76 km | |
| | Firth of Tay and Eden Estuary SAC | 121 km | |
| SW_NE6_to_Peterhead 2 | Firth of Tay and Eden Estuary SAC | 120 km | |
| SW_NE7_to_Peterhead DCSS | Firth of Tay and Eden Estuary SAC | 120 km | |
| SW_NE8_to_Peterhead 1 | Firth of Tay and Eden Estuary SAC | 118 km | |
| Aspen_to_Beech | Firth of Tay and Eden Estuary SAC | 203 km | |
| | Sanday SAC | 208 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Dornoch Firth and Morrich More SAC | 218 km | |
| Aspen_to_Fetteresso | Firth of Tay and Eden Estuary SAC | 31 km | |
| | Dornoch Firth and Morrich More SAC | 132 km | |
| | Sanday SAC | 207 km | |
| Beech_to_Beech MPI | Sanday SAC | 272 km | |
| | Firth of Tay and Eden Estuary SAC | 305 km | |
| | Dornoch Firth and Morrich More SAC | 329 km | |
| Beech_to_Cedar | Firth of Tay and Eden Estuary SAC | 212 km | |
| | Dornoch Firth and Morrich More SAC | 276 km | |
| | Sanday SAC | 281 km | |
| Cedar_to_Aspen | Sanday SAC | 208 km | |
| | Dornoch Firth and Morrich More SAC | 216 km | |
| | Firth of Tay and Eden Estuary SAC | 216 km | |
| Cedar_to_Branxton | Firth of Tay and Eden Estuary SAC | 46 km | |
| | Dornoch Firth and Morrich More SAC | 291 km | |
| | Sanday SAC | 308 km | |
| North Connect_to_Cenos | Sanday SAC | 238 km | |
| | Firth of Tay and Eden Estuary SAC | 216 km | |
| | Dornoch Firth and Morrich More SAC | 311 km | |
| Peterhead_to_Cenos | Firth of Tay and Eden Estuary SAC | 118 km | |
| | Dornoch Firth and Morrich More SAC | 128 km | |
| | Sanday SAC | 187 km | |
| Scaraben_to_Peterhead_2 | Firth of Tay and Eden Estuary SAC | 119 km | |
| Sinclair_to_Scaraben | Firth of Tay and Eden Estuary SAC | 200 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Afon Gwyrfai a Llyn Cwellyn SAC | Within the HND corridor | These sites were screened in as they are designated for migratory fish (and/or the associated freshwater pearl mussel) and the associated study corridors running directly through their boundaries.<br>Migratory fish are diadromous, meaning they migrate between freshwater and marine environments.<br>As the study corridor is proposed to directly traverse these SACs, additional consideration of these qualifying species and their seasonal migrations will be required at the project-level.<br>Disturbance to these species could be avoided entirely at the project level, with embedded seasonal restrictions on cable installation during migration.<br>Therefore, it is believed that adverse effects on these qualifying species and AEoSI could be avoided, but this must be embedded into the project design. |
| SW_N1_to_Spittal | River Thurso SAC | Within the HND corridor | |
| Shetland_to_Blackhillock | River Spey SAC | Within HNDFUE corridor | |
| SW_NE2_to_Spittal | River Thurso SAC | Within the HNDFUE corridor | |
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_Linconshire Connection Node | Humber Estuary SAC | 5 km | These sites were screened in as they are designated for migratory fish and are located within 5 km of a study corridor.<br>These sites are designated for diadromous fish which migrate between freshwater and the marine environment. Disturbance to these species could be avoided entirely at the project level, with embedded seasonal restrictions on cable installation during migration.<br>Therefore, it is believed that AEoSI could be avoided at the project level. |
| SW_E1a_to_Branxton | River Tweed SAC | 5 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Humber Estuary SAC | 4 km | |
| PDA1_to_Llandyfaelog | Afon Tywi/River Tywi SAC | 4 km | |

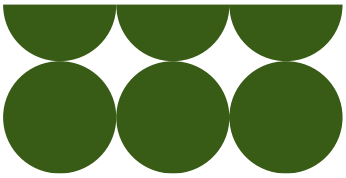
# Barriers to migration

Increased SSC during installation and decommissioning, and EMF present during the operational lifespan of the cable can create a migration barrier between freshwater and marine habitats. Depending on the orientation and location of the cable in relation to the spawning habitat, this can potentially prevent or delay migration and subsequently affect adults accessing spawning grounds, or juvenile navigation post spawning. As a conservative approach, 100 km is considered an appropriate distance at appropriate assessment stage for cables potentially creating barrier effects. This is on the basis that the greatest likelihood for effects sufficient to affect the ability of European sites to achieve their conservation objectives is likely to arise closer to the European site than more distantly where there are more opportunities for migratory fish to avoid barriers to reach that SAC. The assessment is provided in **Table 16**.

There is abundant evidence that marine animals derive their direction, and even geographic position, from features in the main magnetic field and so cable EMF have the potential to disrupting fish movement including migration (Klimley *et al*., 2021). This is most pertinent for electrosensitive migratory fish species, such as salmonids, eels, and lamprey. However, a field study of behavioural responses has found no significant difference to migration success (Wyman *et al*., 2018) in juvenile salmon, nor strong avoidance actions by European eel (*Anguilla anguilla*; Westerberg & Begout-Anras, 2000). Moreover, the study corridor represents a small area of a potential migratory route, and thus migratory fish are unlikely to have their behaviour altered by EMF, and thus barrier effects are considered unlikely (Bochert & Zettler, 2004, Bergström *et al*., 2013; Hammar *et al*., 2014).

As discussed in the earlier section on **SSC,** long-term increases in SSC may serve as a barrier to migration between marine and freshwater environments. The response of migratory fish to increased SSC has varied by species, ranging from avoidance to no effect (Rodrigues et al., 2023). Migrating chinook (*Onchorhynchus tshawytscha*) and coho (*O. kisutch*) salmon smolt have previously been observed avoiding a sediment plume associated with dredging during migration but returned to their prior distribution trends shortly thereafter (Kjelland et al., 2015). Conversely, subadult white sturgeon (*Acipenser transmontanus*) exhibited little change in movement patterns in response to hopper dredge disposal activities (Kjelland et al., 2015). Additionally, migratory species such as Atlantic salmon have been shown to spend the majority of their time in the upper reaches of the water column (0-5 m; Godfrey et al., 2015) and thus are unlikely to encounter mobilised sediment in bottom 5 m of the water column. Furthermore, most of the rivers in the Study Area used by migratory fish are located more than 17 km away from the Offshore Project Boundary and therefore are anticipated to fall outside of the zone where increased SSC is likely. Due to the short-term nature of any increase in SSC during installation of the cable, it is unlikely to act as a barrier to migrating fish between marine and freshwater environments.

The open nature of coastal waters and localised nature of cable installation activities mean that in most cases activities are unlikely to create a barrier for migratory fish. Furthermore,



as the HVDC cables will likely be buried within the seabed (or covered by cable protection where this is not possible due to ground conditions), the cable itself is highly unlikely to create a physical barrier to migration while operational. With installation methodologies and final study corridor design not yet defined, it is not possible to rule out installation activities for all study corridors preventing fish migration upstream or downstream, either by creating a barrier or disturbing fish away from their intended routes.

In addition, as the freshwater pearl mussel *(M. margaritifera)* is dependent on diadromous fish for part of its life cycle (Skinner et al., 2003), impacts to fish migration may also have an effect on the conservation objectives of the freshwater pearl mussel. Therefore, impacts to this species has also been assessed.

## Mitigation

The following measures have the potential to avoid and/or reduce the impact of barriers to migration on marine receptors, Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar:

- Raise the priority of environmental considerations to an equal footing with other, more-traditional considerations at this strategic level, such as avoiding designated sites, and the need to cross third-party infrastructure, as far as possible;
- Detailed route development and micro-routeing within the study corridor, informed by pre-installation evaluation of site-specific survey data to avoid or minimise localised engineering and environmental constraints, including minimising the footprint as much as possible;
- Consideration of the need for EMF modelling, to inform design;
- Consideration of the configuration of multiple cables (e.g. bundled);
- Consideration of the required depth of lowering to minimise EMF emissions
- Consideration of potential migratory routes of diadromous fish (e.g. river mouths).

The application of seasonal restrictions during construction can also avoid the impact entirely, should the migratory fish be qualifying features of a traversed designated site.

## Table 16: Assessment of the potential barriers to migration to have an AEoSI

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Afon Gwyrfai a Llyn Cwellyn SAC | Within the HND corridor | These sites were screened in due to the associated study corridor being within 100 km of its boundaries, as per recommendations by ABPmer (2014 and 2017b). In addition, these sites are located within one tidal ellipse of its boundaries and therefore within the range in which a temporary increase of SSC may occur. However, as migratory fish are likely to actively avoid any temporary and localized sediment plumes and thus any increase in SSC occurring during installation of the cable, it is unlikely to act as a barrier to migrating fish between marine and freshwater environments. Similarly, as impacts to fish migration are considered unlikely, it is not anticipated that there will be impacts on the freshwater pearl mussel, which is dependent on migratory fish for part of its lifecycle. Therefore, impacts to the size and distribution of |
| SW_N1_to_Spittal | River Thurso SAC | Within the HND Corridor | |
| PA_1_to_Birkhill_Wood | Humber Estuary SAC | 6 km | |
| R4_1_to_Birkhill Wood | Humber Estuary SAC | 6 km | |
| R4_2_to_Birkhill Wood | Humber Estuary SAC | 6 km | |
| SW_E1a_to_Linconshire Connection Node | Humber Estuary SAC | 5 km | |
| Shetland_to_Blackhillock | River Spey SAC | Within the HNDFUE corridor | |
| SW_E1a_to_Branxton | River Tweed SAC | 5 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Humber Estuary SAC | 4 km | |
| SW_E1c_2_to_Weston Marsh | Humber Estuary SAC | 7 km | |
| SW_E3_to_Fiddes | River Dee SAC | 9 km | |
| SW_N2_to_Near_Dounreay | River Thurso SAC | 10 km | |
| SW_NE2_to_Spittal | River Thurso SAC | Within the HNDFUE corridor | |
| Aspen_to_Fetteresso | River South Esk SAC | 6 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | River Dee SAC | 6 km | populations are considered to be negligible and the conservation objectives of these sites will not be hindered; thus no AEoSI has been concluded. |
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| | River Tywi/Afon Tywi SAC | 4 km | |
| | Cleddau Rivers/Afonydd Cleddau SAC | 26 km | |
| PDA2_to_South_Wales_Connection_Node | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | 8 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 9 km | |
| | River Tywi/Afon Tywi SAC | 36 km | |
| | Cleddau Rivers/Afonydd Cleddau SAC | 38 km | |
| Ballantrae_to_Pentir | Afon Eden - Cors Goch Trawsfynydd SAC | 28 km | These sites were screened in due to the associated study corridor being within 100 km of its boundaries, as per recommendations by ABPmer (2014 and 2017b). However, the study corridor overlaps with a small area of a potential migratory route, thus it is unlikely to act as a barrier to migrating fish |
| | Dee Estuary SAC | 51 km | |
| | River Ehen SAC | 80 km | |
| | Afon Teifi/River Teifi SAC | 91 km | |
| PA_2_ to_Berwick_Bank | River Eden SAC | 64 km | |
| | Solway Firth SAC | 94 km | |
| R4_3_to_Weston_Marsh | Humber Estuary SAC | 13 km | |
| | River Derwent SAC | 94 km | |
| SW_E1a_to_Hawthorn Pit | River Tweed SAC | 57 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | River Eden SAC | 63 km | between marine and freshwater environments. Therefore, impacts to the size and distribution of populations are considered to be negligible and the conservation objectives of these sites will not be hindered; thus no AEoSI has been concluded. |
| | Tweed Estuary SAC | 70 km | |
| | River Derwent SAC | 74 km | |
| | River Dee SAC | 87 km | |
| SW_NE7_ To_Peterhead | River Dee SAC | 37 km | |
| | River Spey SAC | 73 km | |
| | River South Esk SAC | 93 km | |
| SW_NE4_to_New Deer | River Spey SAC | 28 km | |
| | River Dee SAC | 38 km | |
| | Berriedale and Langwell Waters SAC | 57 km | |
| | River Thurso SAC | 57 km | |
| | River South Esk | 82 km | |
| | River Tay SAC | 92 km | |
| | River Naver SAC | 97 km | |
| SW_E1a_to_SW_e1b | River Dee SAC | 76 km | |
| SW_E1a_to_Fiddes | River Dee SAC | 9 km | |
| | River Spey | 41 km | |
| | River Tay | 44 km | |
| | River South Esk | 82 km | |
| Kilmarnock_South_to_Ballantrae | River Bladnoch SAC | 15 km | |
| | Endrick Water SAC | 49 km | |
| | River Tweed SAC | 60 km | |
| | River Teith SAC | 67 km | |
| | Solway Firth SAC | 79 km | |
| | River Tay SAC | 89 km | |
| SW_N4_to_Arnish_(Lewis) | Langavat SAC | 17 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| R4_6_to_Penwortham | North Harris SAC | 30 km | |
| | Little Gruinard River SAC | 63 km | |
| | River Oykel SAC | 79 km | |
| | River Dee and Bala Lake/Afon Dyfrdwy a Llyn Tegid SAC | 56 km | |
| | River Ehen SAC | 61 km | |
| | Solway Firth SAC | 63 km | |
| | River Derwent and Bassenthwaite Lake SAC | 70 km | |
| | River Eden SAC | 71 km | |
| | River Bladnoch SAC | 96 km | |
| R4_4_to_Bodelwyddan | River Dee and Bala Lake/ Afon Dyfrdwy a Llyn Tegid SAC | 25 km | |
| | Afon Gwyrfai a Llyn Cwellyn SAC | 38 km | |
| | River Ehen SAC | 87 km | |
| | River Wye/Afon Gwy SAC | 89 km | |
| | Solway Firth SAC | 89 km | |
| | River Derwent and Bassenthwaite Lake SAC | 94 km | |
| R4_5_to_Penwortham | Dee Estuary SAC | 31 km | |
| | River Dee and Bala Lake/Afon Dyfrdwy a Llyn Tegid SAC/Ramsar | 56 km | |
| | River Derwent and Bassenthwaite Lake SAC | 74 km | |
| | River Ehen SAC | 76 km | |
| | Afon Gwyrfai a Llyn Cwellyn SAC | 84 km | |
| | Solway Firth SAC | 89 km | |
| SW_N1_to_Spittal | Berriedale and Langwell Waters SAC | 24 km | |
| | River Naver SAC | 29 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | River Borgie SAC | 30 km | |
| | River Oykel SAC | 79 km | |
| | River Spey SAC | 89 km | |
| PA_1_to_Birkhill_Wood | River Derwent SAC | 28 km | |
| R4_1_to_Birkhill Wood | River Derwent SAC | 28 km | |
| R4_2_to_Birkhill Wood | River Derwent SAC | 28 km | |
| | River Derwent SAC | 28 km | |
| SW_E1a_to_Linconshire Connection Node | River Derwent SAC | 74 km | |
| | River Dee SAC | 87 km | |
| | River Tweed SAC | 99 km | |
| SW_W1_to_Ballantrae | Lough Foyle Ramsar | 46 km | |
| Shetland_to_Blackhillock | Berriedale and Langwell Waters SAC | 15 km | |
| | River Thurso SAC | 20 km | |
| | River Dee SAC | 40 km | |
| | River Naver SAC | 59 km | |
| | River Oykel SAC | 64 km | |
| | River Borgie SAC | 69 km | |
| | River South Esk SAC | 71 km | |
| | River Tay SAC | 77 km | |
| SW_E1a_to_Branxton | Tweed Estuary SAC | 19 km | |
| | River Tay SAC | 64 km | |
| | River South Esk SAC | 74 km | |
| | River Dee SAC | 87 km | |
| | River Teith SAC | 91 km | |
| | River Eden SAC | 99 km | |
| SW_E1a_to_SW_E1c_2 | River Dee SAC | 87 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1c_1_to_Lincolnshire Connection Node | River Derwent SAC | 74 km | |
| | River Dee SAC | 99 km | |
| SW_E1c_1_to_SW_E1c_2 | River Dee SAC | 99 km | |
| SW_E1c_2_to_Weston Marsh | River Derwent SAC | 81 km | |
| SW_E2a_2_to_SW_E1c_1 | River Dee SAC | 99 km | |
| SW_E2b_to_SW_E2a_1 | River Dee SAC | 92 km | |
| SW_E2a_2_to_Peterhead 2 | River Dee SAC | 38 km | |
| | River Spey SAC | 66 km | |
| | River South Esk SAC | 93 km | |
| SW_E3_to_Fiddes | River South Esk SAC | 15 km | |
| | River Tay SAC | 39 km | |
| | River Spey SAC | 66 km | |
| SW_N2_to_Near_Dounreay | River Borgie SAC | 18 km | |
| | River Naver SAC | 19 km | |
| | Berriedale and Langwell Waters SAC | 30 km | |
| | River Oykel SAC | 58 km | |
| | Little Gruinard River SAC | 99 km | |
| SW_N3_to_Arnish | Langavat SAC | 15 km | |
| | North Harris SAC | 29 km | |
| | River Oykel SAC | 61 km | |
| | Little Gruinard River SAC | 63 km | |
| | River Naver SAC | 73 km | |
| | River Borgie SAC | 84 km | |
| SW_NE2_to_Spittal | River Naver SAC | 38 km | |
| | River Borgie SAC | 45 km | |
| | River Oykel SAC | 81 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | River Spey SAC | 89 km | |
| SW_NE3_to_New_Deer_2 | River Dee SAC | 40 km | |
| | River Spey SAC | 43 km | |
| | River Thurso SAC | 72 km | |
| | Berriedale and Langwell Waters SAC | 83 km | |
| | River South Esk SAC | 95 km | |
| | River Tay SAC | 95 km | |
| SW_NE4_to_New Deer | River Spey SAC | 28 km | |
| | River Dee SAC | 37 km | |
| | Berriedale and Langwell Waters SAC | 56 km | |
| | River Thurso SAC | 57 km | |
| | River South Esk | 82 km | |
| | River Tay SAC | 92 km | |
| | River Naver SAC | 97 km | |
| SW_NE6_to_Peterhead 2 | River Spey SAC | 65 km | |
| | River Dee SAC | 87 km | |
| | River South Esk SAC | 93 km | |
| | River Thurso | 96 km | |
| | Berriedale and Langwell Waters SAC | 97 km | |
| SW_NE7_to_Peterhead DCSS | River Dee SAC | 38 km | |
| | River Spey SAC | 67 km | |
| | River South Esk SAC | 93 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE8_to_Peterhead 1 | River Dee SAC | 36 km | |
| | River Spey SAC | 63 km | |
| | River South Esk SAC | 91 km | |
| Aspen_to_Fetteresso | River Tay SAC | 30 km | |
| | River Spey SAC | 62 km | |
| | River Tweed SAC | 94 km | |
| Cedar_to_Branxton | River Tweed SAC | 6 km | |
| | Tweed Estuary SAC | 19 km | |
| | River Tay SAC | 68 km | |
| | River South Esk SAC | 76 km | |
| | River Teith SAC | 94 km | |
| | River Eden SAC | 99 km | |
| Peterhead_to_Cenos | River Dee SAC | 35 km | |
| | River South Esk SAC | 91 km | |
| Scaraben_to_Peterhead_2 | River Dee SAC | 38 km | |
| | River Spey | 67 km | |
| | River South Esk | 93 km | |
| Sinclair_to_Scaraben | River Thurso SAC | 94 km | |
| PDA1_to_Llandyfaelog | Afon Tywi/River Twyi SAC | 4 km | |
| | Afon Teifi/River Teifi SAC | 22 km | |
| | Afonydd Cleddau/Cleddau Rivers SAC | 26 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 40 km | |
| | River Usk/Afon Wysg SAC | 41 km | |
| | River Wye/Afon Gwy SAC | 52 km | |
| | Severn Estuary/Môr Hafren SAC/Ramsar | 81 km | |
| | River Camel SAC | 92 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| PDA2_to_South_Wales_Connection_Node | River Usk/Afon Wysg SAC | 29 km | |
| | Severn Estuary/Môr Hafren SAC/Ramsar | 33 km | |
| | Afon Tywi/River Tywi | 36 km | |
| | Afonydd Cleddau/Cleddau Rivers SAC | 38 km | |
| | River Wye/Afon Gwy SAC | 47 km | |
| | Afon Teifi/River Teifi SAC | 56 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 69 km | |
| | River Camel SAC | 74 km | |
| | River Axe SAC | 92 km | |
| | Plymouth Sound and Estuaries SAC | 94 km | |
| | River Clun SAC | 98 km | |
| PDA3_to_Pyworthy | River Camel SAC | 19 km | |
| | Plymouth Sound and Estuaries SAC | 31 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 46 km | |
| | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | 61 km | |
| | Afonydd Cleddau/Cleddau Rivers SAC | 76 km | |
| | Severn Estuary/Môr Hafren SAC/Ramsar | 77 km | |
| | Afon Tywi/River Tywi SAC | 84 km | |
| | River Axe SAC | 87 km | |
| | Afon Teifi/River Teifi SAC | 99 km | |
| | Afon Wysg/River Usk SAC | 105 km | |
| | Afon Gwy/River Wye SAC | 128 km | |
| Ballantrae_to_Pentir | Afon Eden - Cors Goch Trawsfynydd SAC | 28 km | |

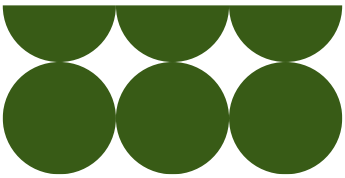
| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | River Ehen SAC | 80 km | These sites were screened in as they have a freshwater pearl mussel features and they are within 100 km of the study corridor, as per recommendations by ABPmer (2014 and 2017b). However, the study corridor overlaps with a small area of a potential migratory route, thus it is unlikely to act as a barrier to migrating fish between marine and freshwater environments. Therefore, as impacts to fish migration are considered unlikely, it is not anticipated that there will be impacts on the freshwater pearl mussel, which is dependent on migratory fish for part of its lifecycle. Therefore, impacts to the size and distribution of populations are considered to be negligible and the conservation objectives of these sites will not be hindered; thus no AEoSI has been concluded. |
| SW_E1a_to_Hawthorn Pit | River Dee SAC | 87 km | |
| SW_NE7_ To_Peterhead | River Dee SAC | 37 km | |
| | River Spey SAC | 73 km | |
| | River South Esk SAC | 93 km | |
| SW_NE4_to_New Deer | River Spey SAC | 28 km | |
| | River Dee SAC | 38 km | |
| | River South Esk | 82 km | |
| | River Naver SAC | 97 km | |
| SW_E1a_to_SW_e1b | River Dee SAC | 76 km | |
| SW_E1a_to_Fiddes | River Dee SAC | 9 km | |
| | River Spey | 41 km | |
| | River South Esk | 82 km | |
| SW_N4_to_Arnish_(Lewis) | North Harris SAC | 30 km | |
| | River Oykel SAC | 79 km | |
| R4_6_to_Penwortham | River Ehen SAC | 61 km | |
| R4_4_to_Bodelwyddan | River Ehen SAC | 87 km | |
| R4_5_to_Penwortham | River Ehen SAC | 76 km | |
| SW_N1_to_Spittal | River Naver SAC | 29 km | |
| | River Borgie SAC | 30 km | |
| | River Oykel SAC | 79 km | |
| | Ardvar and Loch a`Mhuilinn Woodlands SAC | 84 km | |
| | River Spey SAC | 89 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_Linconshire Connection Node | River Dee SAC | 87 km | |
| Shetland_to_Blackhillock | River Spey SAC | Within the HNDFUE corridor | |
| | River Dee SAC | 40 km | |
| | River Evelix SAC | 49 km | |
| | River Naver SAC | 59 km | |
| | River Oykel SAC | 64 km | |
| | River Borgie SAC | 69 km | |
| | Foinaven SAC | 86 km | |
| SW_E1a_to_Branxton | River South Esk SAC | 74 km | |
| | River Dee SAC | 87 km | |
| SW_E1a_to_SW_E1c_2 | River Dee SAC | 87 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | River Dee SAC | 99 km | |
| SW_E1c_1_to_SW_E1c_2 | River Dee SAC | 99 km | |
| SW_E2a_2_to_SW_E1c_1 | River Dee SAC | 99 km | |
| SW_E2b_to_SW_E2a_1 | River Dee SAC | 92 km | |
| SW_E2a_2_to_Peterhead 2 | River Dee SAC | 38 km | |
| | River Spey SAC | 66 km | |
| | River South Esk SAC | 93 km | |
| SW_E3_to_Fiddes | River Dee SAC | 9 km | |
| | River South Esk SAC | 15 km | |
| | River Spey SAC | 66 km | |
| SW_N2_to_Near_Dounreay | River Borgie SAC | 18 km | |
| | River Naver SAC | 19 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_N3_to_Arnish | Ardvar and Loch a`Mhuilinn Woodlands SAC | 46 km | |
| | Abhainn Clais An Eas and Allt a`Mhuilinn SAC | 56 km | |
| | River Oykel SAC | 58 km | |
| | River Evelix SAC | 72 km | |
| | North Harris SAC | 29 km | |
| | River Oykel SAC | 61 km | |
| | River Naver SAC | 73 km | |
| | River Borgie SAC | 84 km | |
| SW_NE2_to_Spittal | River Spey SAC | 65 km | |
| | River Dee SAC | 87 km | |
| | River South Esk SAC | 93 km | |
| SW_NE3_to_New_Deer_2 | River Dee SAC | 40 km | |
| | River Spey SAC | 43 km | |
| | River South Esk SAC | 95 km | |
| SW_NE4_to_New Deer | River Spey SAC | 28 km | |
| | River Dee SAC | 38 km | |
| | River South Esk | 82 km | |
| | River Naver SAC | 97 km | |
| SW_NE6_to_Peterhead 2 | River Spey SAC | 65 km | |
| | River Dee SAC | 87 km | |
| | River South Esk SAC | 93 km | |
| SW_NE7_to_Peterhead DCSS | River Dee SAC | 38 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | River Spey SAC | 67 km | |
| | River South Esk SAC | 93 km | |
| SW_NE8_to_Peterhead 1 | River Dee SAC | 36 km | |
| | River Spey SAC | 63 km | |
| | River South Esk SAC | 91 km | |
| Aspen_to_Fetteresso | River South Esk SAC | 6 km | |
| | River Dee SAC | 6 km | |
| | River Spey SAC | 62 km | |
| Cedar_to_Branxton | River South Esk SAC | 76 km | |
| Peterhead_to_Cenos | River Dee SAC | 35 km | |
| | River South Esk SAC | 91 km | |
| Scaraben_to_Peterhead_2 | River Dee SAC | 38 km | |
| | River Spey | 67 km | |
| | River South Esk | 93 km | |
| PDA2_to_South_Wales_Connection_Node | River Clun SAC | 98 km | |
| SW_E2a_1_to_SW_E2a_2 | N/A | N/A | For these study corridors, no European sites have been screened into the assessment for barriers to fish migration. |
| SW_E2a_2_to_Near Richborough | N/A | N/A | |
| SW_NE1a_to_Shetland | N/A | N/A | |
| SW_NE1b_to_Shetland | N/A | N/A | |
| SW_NE1c_to_Shetland | N/A | N/A | |
| Aspen_to_Beech | N/A | N/A | |
| Beech_to_Beech MPI | N/A | N/A | |
| Beech_to_Cedar | N/A | N/A | |
| Cedar_to_Aspen | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| North Connect_to_Cenos | N/A | N/A | |



# Changes in prey availability

The availability and provision of food items is essential to support marine mammals and seabird colonies in the marine environment, and waterfowl and waders in the intertidal, freshwater and terrestrial environments. Some of the most relevant prey items are sandeels, European sprat, goby, saithe and whiting. Changes in prey availability can result from temporary disturbance through increased SSC and sediment deposition (in low sediment environments), or through permanent loss of seabed or intertidal habitats.

It is not possible to determine the magnitude of change in the availability of prey species for any cable route until more details pertaining to the timing, frequency and extent of impact is known, particularly in instances where the cable route directly overlaps with an SAC or SPA. In instances where seabed or intertidal habitats are permanently lost, it may be possible that any subsequent changes in prey availability would not be temporary. This would need to be considered against the conservation objectives once details at a project level are available.

At plan level, the magnitude of prey resource disturbance cannot be quantified as the precise footprint, timing and construction methodologies are not yet defined. However, seabed disturbance associated with cable installation is typically limited to the trench footprint and immediate vicinity, representing a very small proportion of available marine or intertidal foraging habitat at the scale of designated sites. Evidence from studies of benthic disturbance indicates that soft sediment communities affected by trenching and sediment resuspension generally recover over short to medium timescales, depending on habitat type and hydrodynamic conditions (e.g. Newell et al., 1998; Dernie et al., 2003; Cooper et al., 2007). On this basis and applying professional judgement proportionate to the level of detail available, any reduction in prey availability is expected to be localised and temporary.

Physical disturbance of the seabed during the route preparation and cable installation activities such as cable trenching by trenching or excavating will temporarily increase turbidity and may subsequently result in sediment deposition and smothering of prey species or their displacement.

Overall, when considered in the context of the scale of designated marine mammal and seabird populations and the extent of available foraging habitat, the predicted change in prey availability is expected to be of low magnitude at the site integrity scale. This conclusion reflects the limited spatial footprint of disturbance relative to habitat availability and is informed by established evidence on benthic recovery and sensitivity (e.g. Newell et al., 1998; MarESA/JNCC sensitivity assessments). Therefore, at the scale of the designated sites, the temporary and localised nature of prey disturbance is not expected to hinder the achievement of conservation objectives.

Sites designated for waterfowl and waders were screened in as the study corridor is located within the maximum foraging range (20 km) used to screen in waterfowl and wader features. Affected habitat may only constitute a very small amount of the overall foraging

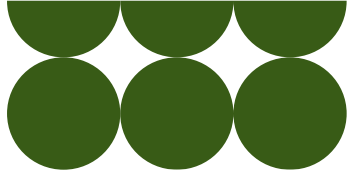
habitat available but waders and waterfowl are more localised in their foraging than most species of seabird and therefore impacts on prey abundance could be significant depending on details which will not be known until the project level. However, mitigation measures are available as listed below which could ensure there was no hindrance of conservation objectives of these site and thus no AEoSI[14]. The assessment is provided in **Table 17**.

## Mitigation

The following measures have the potential to avoid and/or reduce the impact of changes in prey availability if implemented by the applicant at the time a planning consent is granted. Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar:

- Habitat/prey mapping and consideration of timing to avoid key biological periods/locations to reduce impact on prey species;
- Use of certain construction methods to avoid or miminise impacts and disturbance such as use of trenchless methods like Horizontal Direct Drilling to traverse the intertidal environment, particularly habitats such as saltmarsh or reefs;
- Creation or enhancement of alternative freshwater or terrestrial habitat (if the foraging habitat in question lies outside the boundary of a European site) to ensure no net loss in foraging resource;
- Raise the priority of environmental considerations to an equal footing with other, more-traditional considerations at this strategic level, such as avoiding designated sites, and the need to cross third-party infrastructure, as far as possible; and
- Detailed route development and micro-routeing within the study corridor, informed by pre-installation evaluation of site-specific survey data to avoid or minimise localised engineering and environmental constraints, including minimising the footprint as much as possible.

[14] Where quantitative overlap with foraging habitat cannot be determined at this stage, conclusions are based on professional judgement proportionate to the strategic level of assessment. Detailed habitat overlap analysis and prey resource evaluation will be undertaken at project level where required.



## Table 17: Assessment of the potential for changes in prey availability to have an AEoSI

Due to the length of Table 17, it has been split into several tables from Table 17a to Table 17k.

## Table 17a Assessment of the potential for changes in prey availability to have an AEoSI – First Table

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE4_to_New Deer | Moray Firth SAC | 41 km | These sites have been screened in as the cable study corridor is located within the MMMU/SMU. Although marine mammals associated with these sites have potential to forage within the study corridors, the loss of prey will account for only a small area of the available habitats and therefore marine mammals are unlikely to be sensitive to it and will have high recoverability. It is therefore considered that impacts to the size and distributions of populations are considered to be negligible and that conservation objectives of these site will not be hindered and thus no AEoSI will arise. |
| | Dornoch Firth and Morrich More SAC | 76 km | |
| | Southern North Sea SAC | 266 km | |
| SW_NE6_to_Peterhead 2 | Firth of Tay and Eden Estuary SAC | 120 km | |
| | Isle of May SAC | 149 km | |
| | Southern North Sea SAC | 264 km | |
| SW_NE7_to_Peterhead DCSS | Moray Firth SAC | 83 km | |
| | Firth of Tay and Eden Estuary SAC | 120 km | |
| | Isle of May SAC | 149 km | |
| | Southern North Sea SAC | 254 km | |
| SW_NE8_to_Peterhead 1 | Firth of Tay and Eden Estuary SAC | 118 km | |
| | Isle of May SAC | 146 km | |
| | Southern North Sea SAC | 262 km | |
| Aspen_to_Beech | Moray Firth SAC | 180 km | |
| | Firth of Tay and Eden Estuary SAC | 203 km | |
| | Sanday SAC | 208 km | |
| | Dornoch Firth and Morrich More SAC | 218 km | |
| | Faray and Holm of Faray SAC | 220 km | |
| | Isle of May SAC | 220 km | |
| | Southern North Sea SAC | 260 km | |
| Aspen_to_Fetteresso | Firth of Tay and Eden Estuary SAC | 31 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Isle of May SAC | 60 km | |
| | Berwickshire and North Northumberland Coast SAC | 72 km | |
| | Moray Firth SAC | 101 km | |
| | Dornoch Firth and Morrich More SAC | 132 km | |
| | Sanday SAC | 207 km | |
| | Faray and Holm of Faray SAC | 217 km | |
| | Southern North Sea SAC | 230 km | |
| Beech_to_Beech MPI | Sanday SAC | 272 km | |
| | Southern North Sea SAC | 272 km | |
| | Moray Firth SAC | 291 km | |
| | Faray and Holm of Faray SAC | 292 km | |
| | Firth of Tay and Eden Estuary SAC | 305 km | |
| | Berwickshire and North Northumberland Coast SAC | 315 km | |
| | Isle of May SAC | 316 km | |
| | Dornoch Firth and Morrich More SAC | 329 km | |
| Beech_to_Cedar | Southern North Sea SAC | 170 km | |
| | Berwickshire and North Northumberland Coast SAC | 206 km | |
| | Firth of Tay and Eden Estuary SAC | 212 km | |
| | Isle of May SAC | 216 km | |
| | Moray Firth SAC | 236 km | |
| | Dornoch Firth and Morrich More SAC | 276 km | |
| | Sanday SAC | 281 km | |
| | Faray and Holm of Faray SAC | 296 km | |
| Cedar_to_Aspen | Southern North Sea SAC | 166 km | |
| | Moray Firth SAC | 179 km | |
| | Berwickshire and North Northumberland Coast SAC | 207 km | |
| | Sanday SAC | 208 km | |
| | Dornoch Firth and Morrich More SAC | 216 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Firth of Tay and Eden Estuary SAC | 216 km | |
| | Isle of May SAC | 218 km | |
| | Faray and Holm of Faray SAC | 219 km | |
| Cedar_to_Branxton | Berwickshire and North Northumberland Coast SAC | 2 km | |
| | Isle of May SAC | 21 km | |
| | Firth of Tay and Eden Estuary SAC | 46 km | |
| | Southern North Sea SAC | 119 km | |
| | Moray Firth SAC | 215 km | |
| | Dornoch Firth and Morrich More SAC | 291 km | |
| | Sanday SAC | 308 km | |
| | Faray and Holm of Faray SAC | 320 km | |
| North Connect_to_Cenos | Southern North Sea SAC | 187 km | |
| | Sanday SAC | 238 km | |
| | Firth of Tay and Eden Estuary SAC | 216 km | |
| | Berwickshire and North Northumberland Coast SAC | 250 km | |
| | Isle of May SAC | 260 km | |
| | Faray and Holm of Faray SAC | 320 km | |
| | Moray Firth SAC | 278 km | |
| | Dornoch Firth and Morrich More SAC | 311 km | |
| Peterhead_to_Cenos | Moray Firth SAC | 90 km | |
| | Firth of Tay and Eden Estuary SAC | 118 km | |
| | Dornoch Firth and Morrich More SAC | 128 km | |
| | Isle of May SAC | 145 km | |
| | Berwickshire and North Northumberland Coast SAC | 167 km | |
| | Southern North Sea SAC | 169 km | |
| | Sanday SAC | 187 km | |
| | Faray and Holm of Faray SAC | 194 km | |
| Scaraben_to_Peterhead_2 | Moray Firth SAC | 82 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Firth of Tay and Eden Estuary SAC | 119 km | |
| | Isle of May SAC | 148 km | |
| | Southern North Sea SAC | 262 km | |
| Sinclair_to_Scaraben | Moray Firth SAC | 104 km | |
| | Firth of Tay and Eden Estuary SAC | 200 km | |
| | Isle of May SAC | 228 km | |
| | Southern North Sea SAC | 315 km | |
| PDA1_to_Llandyfaelog | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | Within the Celtic Sea corridor | |
| | Lundy SAC | 32 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 40 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 67 km | |
| | North Anglesey Marine/Gogledd Môn Forol SAC | 150 km | |
| | North Channel SAC | 272 km | |
| PDA2_to_South_Wales_Connection_Node | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 9 km | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | 15 km | |
| | Lundy SAC | 20 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 69 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 97 km | |
| | Isles of Scilly Complex SAC | 120 km | |
| | North Anglesey Marine/Gogledd Môn Forol SAC | 184 km | |
| | North Channel SAC | 305 km | |
| PDA3_to_Pyworthy | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Lundy SAC | 7 km | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | 41 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 46 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 108 km | |
| | Isles of Scilly Complex SAC | 120 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 150 km | |
| | North Anglesey Marine/Gogledd Môn Forol SAC | 232 km | |
| | North Channel SAC | 342 km | |

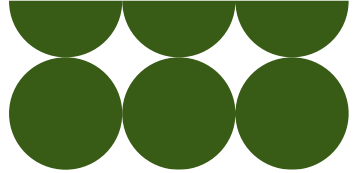
## Table 17b Assessment of the potential for changes in prey availability to have an AEoSI - Second table

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Anglesey Terns/Morwenoliaid Ynys Môn SPA | <1 km | These sites were screened in as the cable corridor is located within the foraging ranges for the designated seabird features. Although seabirds associated with these European Sites are likely to be present within the cable corridors, the loss of prey will account for only a small area of the available marine habitats and therefore bird species are unlikely to be sensitive to it and will have high recoverability. It is therefore considered that impacts to the size and distributions of populations are negligible and that conservation objectives of these site will be hindered and thus no AEoSI. |
| | Ailsa Craig SPA | 9 km | |
| | Liverpool Bay SPA | 9 km | |
| | Ynys Seiriol/Puffin Island SPA | 14 km | |
| | Northern Cardigan Bay/Gogledd Bae Ceredigion SPA | 17 km | |
| | Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island SPA | 22 km | |
| | Outer Ards SPA | 26 km | |
| | Larne Lough SPA/Ramsar | 30 km | |
| | Solway Firth SPA | 34 km | |
| | Belfast Lough SPA/Ramsar | 36 km | |
| | Belfast Lough SPA/Ramsar | 36 km | |
| | Strangford Lough SPA | 35 km | |
| | The Dee Estuary SPA/ Ramsar | 38 km | |
| | Sound of Gigha SPA | 48 km | |
| | Loch Ken and River Dee Marshes SPA | 51 km | |
| | Upper Solway Flats & Marshes Ramsar | 52 km | |
| | Rathlin Island SPA | 60 km | |
| | Mersey Narrows and North Wirral Foreshore SPA/Ramsar | 63 km | |
| | Carlingford Lough SPA/Ramsar | 68 km | |
| | Ribble and Alt Estuaries SPA/Ramsar | 74 km | |
| | Morecambe Bay and Duddon Estuary SPA/Ramsar | 82 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Knapdale Lochs SPA | 84 km | |
| | Irish Sea Front SPA | 85 km | |
| | Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA | 146 km | |
| | Grassholm SPA | 154 km | |
| | Rum SPA | 207 km | |
| | Canna and Sanday SPA | 226 km | |
| | Mingulay and Berneray SPA | 235 km | |
| | Shiant Isles SPA | 311 km | |
| | Seas off St Kilda SPA | 339 km | |
| | St Kilda SPA | 355 km | |
| | Flannan Isles SPA | 377 km | |
| | North Rona and Sula Sgeir SPA | 441 km | |
| PA_2_to_Berwick_Bank | Northumberland Marine SPA (Including compensation area Alnmouth 2) | Within the HND corridor | |
| | Northumbria Coast SPA / Ramsar | Within the HND corridor | |
| | Coquet Island SPA | 3 km | |
| | Farne Islands SPA | 5 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 5 km | |
| | Teesmouth and Cleveland Coast SPA (Including compensation area Seal Sands) | 42 km | |
| | Forth Islands SPA | 46 km | |
| | Firth of Forth SPA/ Ramsar (Includes compensation area Kennet Pans) | 48 km | |
| | Fowlsheugh SPA | 62 km | |
| | St Abb`s Head to Fast Castle SPA | 94 km | |
| | Solway Firth SPA | 94 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Upper Solway Flats & Marshes Ramsar | 94 km | |
| | Loch Leven SPA | 95 km | |
| | Buchan Ness to Collieston Coast SPA | 105 km | |
| | Troup, Pennan and Lion`s Heads SPA | 146 km | |
| | East Caithness Cliffs SPA | 222 km | |
| | North Caithness Cliffs SPA | 255 km | |
| | Hoy SPA | 279 km | |
| | Copinsay SPA | 282 km | |
| | Rousay SPA | 317 km | |
| | Calf of Eday SPA | 320 km | |
| | West Westray SPA | 328 km | |
| | Fair Isle SPA | 346 km | |
| | Seas off Foula SPA | 386 km | |
| | Sumburgh Head SPA | 386 km | |
| | Foula SPA | 414 km | |
| | Noss SPA | 418 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 486 km | |
| R4_3_to_Weston_Marsh | Gibraltar Point Ramsar/SPA | 100m from the HND corridor | |
| | Greater Wash SPA | Within the HND corridor | |
| | The Wash SPA/Ramsar | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar (including Alkborough, Chowder Ness, Paull Holmes Strays, Skeffling and Welwick compensation areas) | 6 km | |
| | North Norfolk Coast SPA/Ramsar | 19 km | |
| | Ouse Washes SPA | 38 km | |
| | Upper Nene Valley Gravel Pits SPA | 52 km | |
| | Great Yarmouth North Denes SPA | 70 km | |
| | Outer Thames Estuary SPA | 83 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Flamborough & Filey Coast SPA | 91 km | |
| | Alde-Ore Estuary SPA | 128 km | |
| | Northumberland Marine SPA | 231 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 329 km | |
| | Fowlsheugh SPA | 427 km | |
| | Buchan Ness to Collieston Coast SPA | 462 km | |
| | Troup, Pennan and Lion's Heads SPA | 503 km | |
| SW_E1a_to_Hawthorn Pit | Northumbria Coast Ramsar/ SPA | Within the HND corridor | |
| | Coquet Island SPA | 3 km | |
| | Teesmouth and Cleveland Coast SPA/Ramsar (including compensation area Seal Sands) | 7 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 23 km | |
| | Farne Islands SPA | 45 km | |
| | Lindisfarne SPA/Ramsar | 53 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 59 km | |
| | Fowlsheugh SPA | 80 km | |
| | Flamborough & Filey Coast SPA | 85 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 87 km | |
| | Buchan Ness to Collieston Coast SPA | 95 km | |
| | Forth Islands SPA | 100 km | |
| | Troup, Pennan and Lion's Heads SPA | 135 km | |
| | East Caithness Cliffs SPA | 226 km | |
| | North Caithness Cliffs SPA | 246 km | |
| | Copinsay SPA | 265 km | |
| | Hoy SPA | 271 km | |
| | Auskerry SPA | 279 km | |



| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Calf of Eday SPA | 301 km | |
| | Rousay SPA | 302 km | |
| | West Westray SPA | 313 km | |
| | Fair Isle SPA | 315 km | |
| | Seas off Foula SPA | 335 km | |
| | Sumburgh Head SPA | 352 km | |
| | Seas off Foula SPA | 356 km | |
| | Noss SPA | 382 km | |
| | Foula SPA | 385 km | |
| | Ronas Hill - North Roe and Tingon | 428 km | |
| | Fetlar SPA | 430 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 450 km | |

## Table 17c Assessment of the potential for changes in prey availability to have an AEoSI - Third table

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE7_to_Peterhead | Ythan Estuary and Meikle Loch SPA/Ramsar | 5 km | These sites were screened in as the cable corridor is located within the foraging ranges for the designated seabird features. Although seabirds associated with these European Sites are likely to be present within the cable corridors, the loss of prey will account for only a small area of the available marine habitats and therefore bird species are unlikely to be sensitive to it and will have high recoverability. It is therefore considered that impacts to the size and distributions of populations are negligible and that |
| | Troup, Pennan and Lion`s Heads SPA | 12 km | |
| | Loch of Strathbeg SPA/Ramsar | 13 km | |
| | Moray Firth SPA | 40 km | |
| | Fowlsheugh SPA | 62 km | |
| | Tips of Corsemaul and Tom Mor SPA | 69 km | |
| | Muir of Dinnet SPA | 73 km | |
| | Buchan Ness to Collieston Coast SPA | 95 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 108 km | |
| | North Caithness Cliffs | 138 km | |
| | Copinsay SPA | 139 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Forth Islands SPA | 144 km | conservation objectives of these site will be hindered and thus no AEoSI. |
| | Fair Isle SPA | 154 km | |
| | Hoy SPA | 162 km | |
| | Calf of Eday SPA | 165 km | |
| | Rousay SPA | 172 km | |
| | West Westray SPA | 181 km | |
| | Sumburgh Head SPA | 186 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 190 km | |
| | Seas off Foular SPA | 194 km | |
| | Noss SPA | 215 km | |
| | Foula SPA | 226 km | |
| | Fetlar SPA | 262 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 282 km | |
| | Sule Skerry and Sule Stack SPA | 229 km | |
| | Flamborough and Filey Coast SPA | 336 km | |
| SW_NE4_to_New Deer | Fowlsheugh SPA | 59 km | |
| | Troup, Pennan and Lion`s Heads SPA | 8 km | |
| | Loch of Strathbeg SPA | 23 km | |
| | Buchan Ness to Collieston Coast SPA | 24 km | |
| | East Caithness Cliffs SPA | 37 km | |
| | Moray Firth SPA | 7 km | |
| | Caithness and Sutherland Peatlands SPA | 43 km | |
| | North Caithness Cliffs SPA | 50 km | |
| | Muir of Dinnet SPA/Ramsar | 54 km | |
| | Pentland Firth Islands SPA | 57 km | |
| | Tips of Corsemaul and Tom Mor SPA | 61 km | |
| | Scapa Flow SPA | 68 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Copinsay SPA | 73 km | |
| | Hoy SPA | 74 km | |
| | Inner Moray Firth SPA/Ramsar | 78 km | |
| | North Orkney SPA | 80 km | |
| | Cromarty Firth SPA | 82 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 19 km | |
| | Orkney Mainland Moors SPA | 88 km | |
| | Auskerry SPA | 90 km | |
| | Lairg and Strath Brora Lochs SPA | 93 km | |
| | Calf of Eday SPA | 102 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 102 km | |
| | Rousay SPA | 108 km | |
| | West Westray SPA | 119 km | |
| | Cape Wrath SPA | 139 km | |
| | Forth Islands SPA | 141 km | |
| | Sule Skerry and Sule Stack SPA | 143 km | |
| | Fair Isle SPA | 148 km | |
| | Handa SPA | 155 km | |
| | Seas off Foula SPA | 182 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 192 km | |
| | Sumburgh Head SPA | 192 m | |
| | Foula SPA | 209 km | |
| | North Rona and Sula Sgeir SPA | 213 km | |
| | Noss SPA | 226 km | |
| | Fetlar SPA | 272 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 292 km | |
| | Flamborough and Filey Coast SPA | 377 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_SW_e1b | Outer Firth of Forth and St Andrews Bay Complex SPA | 72 km | |
| | Fowlsheugh SPA | 77 km | |
| | Buchan Ness to Collieston Coast SPA | 79 km | |
| | Ythan Estuary and Meikle Loch SPA/Ramsar | 81 km | |
| | Loch of Strathbeg SPA | 98 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 109 km | |
| | Troup, Pennan and Lion's Heads SPA | 116 km | |
| | East Caithness Cliffs | 207 km | |
| | North Caithness Cliffs SPA | 225 km | |
| | Copinsay SPA | 240 km | |
| | Hoy SPA | 249 km | |
| | Flamborough and Filey Coast SPA | 266 km | |
| | Calf of Eday SPA | 276 km | |
| | Rousay SPA | 278 km | |
| | Fair Isle SPA | 286 km | |
| | West Westray SPA | 288 km | |
| | Sumburgh Head SPA | 322 km | |
| | Seas off Foula SPA | 327 km | |
| | Noss SPA | 352 km | |
| | Foula SPA | 357 km | |
| | Fetlar SPA | 400 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 420 km | |
| SW_E1a_to_Fiddes | Fowlsheugh SPA | 2 km | |
| | Loch of Strathbeg SPA | 23 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 26 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 29 km | |
| | Muir of Dinnet SPA | 38 km | |
| | Buchan Ness to Collieston Coast SPA | 47 km | |
| | Firth of Forth SPA/Ramsar (Includes compensation area Kennet Pans) | 60 km | |
| | Forth Islands SPA | 64 km | |
| | Tips of Corsemaul and Tom Mor SPA | 67 km | |
| | Loch of Strathbeg SPA | 78 km | |
| | Troup, Pennan and Lion`s Heads SPA | 81 km | |
| | Moray Firth SPA | 86 km | |
| | Loch Leven SPA | 92 km | |
| | St Abb`s Head to Fast Castle SPA | 95 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 109 km | |
| | East Caithness Cliffs SPA | 151 km | |
| | North Caithness Cliffs SPA | 186 km | |
| | Hoy SPA | 209 km | |
| | Copinsay SPA | 215 km | |
| | Rousay SPA | 248 km | |
| | Calf of Eday SPA | 253 km | |
| | West Westray SPA | 260 km | |
| | Flamborough and Filey Coast SPA | 266 km | |
| | Fair Isle SPA | 285 km | |
| | Seas off Foula SPA | 323 km | |
| | Sumburgh Head SPA | 325 km | |
| | Foula SPA | 350 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Noss SPA | 357 km | |
| | Fetlar SPA | 405 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 425 km | |
| Kilmarnock_South_to_Ballantrae | Ailsa Craig SPA | 1 km | |
| | Solway Firth SPA | 45 km | |
| | Sound of Gigha SPA | 48 km | |
| | Loch Ken and River Dee Marshes SPA | 52 km | |
| | Larne Lough SPA/Ramsar | 54 km | |
| | Outer Ards SPA | 58 km | |
| | Belfast Lough SPA/Ramsar | 63 km | |
| | Firth of Forth SPA/Ramsar (Includes compensation area Kennet Pans) | 65 km | |
| | Knapdale Lochs SPA | 65 km | |
| | Strangford Lough Ramsar | 71 km | |
| | Forth Islands SPA | 79 km | |
| | Upper Solway Flats & Marshes Ramsar | 79 km | |
| | Muir of Dinnet SPA | 81 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 81 km | |
| | Imperial Dock Lock, Leith SPA | 90 km | |
| | Loch Leven SPA | 92 km | |
| | Morecambe Bay and Duddon Estuary SPA | 128 km | |
| | Rum SPA | 178 km | |
| | Ribble and Alt Estuaries SPA | 193 km | |
| | Canna and Sanday SPA | 198 km | |
| | Mingulay and Berneray SPA | 224 km | |
| | Shiant Isles SPA | 275 km | |
| | Seas off St Kilda SPA | 321 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | St Kilda SPA | 337 km | |
| | Flannan Isles SPA | 348 km | |
| | Skomer, Skokholm and the Seas off Pembrokeshire SPA | 370 km | |
| | Grassholm SPA | 374 km | |
| | North Rona and Sula Sgeir SPA | 397 km | |
| SW_N4_to_Arnish_(Lewis) | Lewis Peatlands SPA/Ramsar | Within the HND Corridor | |
| | Shiant Isles SPA | 27 km | |
| | West Coast of the Outer Hebrides SPA | 37 km | |
| | Flannan Isles SPA | 43 km | |
| | Priest Island (Summer Isles) SPA | 54 km | |
| | Seas off St Kilda SPA | 57 km | |
| | Wester Ross Lochs SPA | 60 km | |
| | Assynt Lochs SPA | 63 km | |
| | Inverpolly, Loch Urigill and Nearby Lochs SPA | 64 km | |
| | Handa SPA | 66 km | |
| | Loch Maree SPA/Ramsar | 66 km | |
| | Mointeach Scadabhaigh SPA | 77 km | |
| | North Rona and Sula Sgeir SPA | 78 km | |
| | Cape Wrath SPA | 84 km | |
| | Caithness and Sutherland Peatlands SPA | 90 km | |
| | Monach Isles SPA | 99 km | |
| | Rum SPA | 119 km | |
| | Canna and Sanday SPA | 121 km | |
| | Sule Skerry and Sule Stack SPA | 134 km | |
| | North Caithness Cliffs SPA | 147 km | |
| | East Caithness Cliffs SPA | 159 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Mingulay and Berneray SPA | 163 km | |
| | Hoy SPA | 181 km | |
| | Rousay SPA | 211 km | |
| | Copinsay SPA | 222 km | |
| | West Westray SPA | 222 km | |
| | Calf of Eday SPA | 234 km | |
| | Seas off Foula SPA | 270 km | |
| | Fair Isle SPA | 302 km | |
| | Foula SPA | 314 km | |
| | Ailsa Craig SPA | 330 km | |
| | Sumburgh Head SPA | 338 km | |
| | Noss SPA | 366 km | |
| | Fetlar SPA | 396 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 409 km | |

## Table 17d Assessment of the potential for changes in prey availability to have an AEoSI - Fourth table

| Corridor name | Corridor name | Corridor name | Corridor name |
|---|---|---|---|
| R4_6_to_Penwortham | Liverpool Bay SPA | Within the HND corridor | These sites were screened in as the cable corridor is located within the foraging ranges for the designated seabird features. Although seabirds associated with these European Sites are likely to be present within the cable corridors, the loss of prey will account for only a small area of the available marine habitats and |
| | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HND corridor | |
| | Morecambe Bay and Duddon Estuary SPA/Ramsar | 7 km | |
| | Bowland Fells SPA | 16 km | |
| | Mersey Narrows and North Wirral Foreshore SPA/Ramsar | 30 km | |
| | The Dee Estuary SPA/Ramsar | 38 km | |
| | Anglesey Terns/Morwenoliaid Ynys Môn SPA | 54 km | |

| Corridor name | Corridor name | Corridor name | Corridor name |
|---|---|---|---|
| | Irish Sea Front SPA | 66 km | therefore bird species are unlikely to be sensitive to it and will have high recoverability. It is therefore considered that impacts to the size and distributions of populations are negligible and that conservation objectives of these site will be hindered and thus no AEoSI. |
| | Upper Solway Flats & Marshes Ramsar | 91 km | |
| | Loch Ken and River Dee Marshes SPA | 99 km | |
| | Outer Ards SPA | 99 km | |
| | Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island SPA | 129 km | |
| | Ailsa Craig SPA | 150 km | |
| | Rathlin Island SPA | 194 km | |
| | Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfr SPA | 249 km | |
| | Grassholm SPA | 259 km | |
| | North Colonsay and Western Cliffs SPA | 266 km | |
| | Treshnish Isles SPA | 312 km | |
| | Rum SPA | 348 km | |
| | Mingulay and Berneray SPA | 378 km | |
| | The Shiant Isles SPA | 450 km | |
| | Seas off St Kilda SPA | 482 km | |
| | Handa SPA | 487 km | |
| | St Kilda SPA | 499 km | |
| | Cape Wrath SPA | 509 km | |
| | Flannan Isles SPA | 519 km | |
| | North Rona and Sula Sgeir SPA | 574 km | |
| R4_4_to_Bodelwyddan | Liverpool Bay SPA | Within HND corridor | |
| | Anglesey Terns / Morwenoliaid Ynys Môn SPA | 9 km | |
| | The Dee Estuary SPA/Ramsar | 9 km | |
| | Ynys Seiriol/Puffin Island SPA | 11 km | |
| | Mersey Narrows and North Wirral Foreshore SPA/Ramsar | 21 km | |

| Corridor name | Corridor name | Corridor name | Corridor name |
|---|---|---|---|
| | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | 35 km | |
| | Morecambe Bay and Duddon Estuary SPA | 51 km | |
| | Morecambe Bay Ramsar | 56 km | |
| | Northern Cardigan Bay/Gogledd Bae Ceredigion SPA | 56 km | |
| | Irish Sea Front SPA | 59 km | |
| | Bowland Fells SPA | 81 km | |
| | Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island SPA | 82 km | |
| | Solway Firth SPA | 89 km | |
| | Ailsa Craig SPA | 180 km | |
| | Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA | 199 km | |
| | Grassholm SPA | 210 km | |
| | Rathlin Island SPA | 220 km | |
| | Rum SPA | 378 km | |
| | Mingulay and Berneray SPA | 406 km | |
| | Shiant Isles SPA | 480 km | |
| | Seas off St Kilda SPA | 511 km | |
| | Handa SPA | 517 km | |
| | St Kilda SPA | 527 km | |
| | Cape Wrath SPA | 539 km | |
| | Flannan Isles SPA | 548 km | |
| | North Rona and Sula Sgeir SPA | 605 km | |
| R4_5_to_Penwortham | Liverpool Bay SPA | Within the HND corridor | |

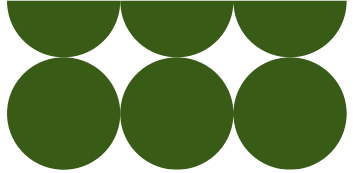
| Corridor name | Corridor name | Corridor name | Corridor name |
|---|---|---|---|
| | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HND corridor | |
| | Morecambe Bay and Duddon Estuary SPA/Ramsar | 7 km | |
| | Bowland Fells SPA | 16 km | |
| | Mersey Narrows and North Wirral Foreshore SPA/Ramsar | 30 km | |
| | Dee Estuary SPA/Ramsar | 31 km | |
| | Anglesey Terns/Morwenoliaid Ynys MÃ´n SPA | 53 km | |
| | Ynys Seiriol/Puffin Island SPA | 57 km | |
| | Irish Sea Front SPA | 85 km | |
| | Solway Firth SPA | 89 km | |
| | Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island SPA | 127 km | |
| | Ailsa Craig SPA | 183 km | |
| | Rathlin Island | 230 km | |
| | Skomer, Skokholm and the Seas off Pembrokeshire SPA | 248 km | |
| | Grassholm SPA | 257 km | |
| | North Colonsay and Western Cliffs SPA | 299 km | |
| | Rum SPA | 380 km | |
| | Mingulay and Berneray SPA | 413 km | |
| | The Shiant Isles SPA | 480 km | |
| | Handa SPA | 514 km | |
| | Seas off St Kilda SPA | 516 km | |
| | North Caithness Cliffs SPA | 528 km | |
| | St Kilda SPA | 532 km | |
| | Cape Wrath SPA | 535 km | |
| | Flannan Isles SPA | 551 km | |
| | North Rona and Sula Sgeir SPA | 602 km | |

| Corridor name | Corridor name | Corridor name | Corridor name |
|---|---|---|---|
| SW_N1_to_Spittal | North Caithness Cliffs SPA | Within the HND corridor | |
| | Caithness Lochs Ramsar/SPA | 1 km | |
| | Caithness and Sutherland Peatlands SPA/Ramsar | 4 km | |
| | Sule Skerry and Sule Stack SPA | 16 km | |
| | East Caithness Cliffs SPA | 20 km | |
| | Hoy SPA | 22 km | |
| | Scapa Flow SPA | 27 km | |
| | Moray Firth SPA | 32 km | |
| | Orkney Mainland Moors SPA | 42 km | |
| | Marwick Head SPA | 44 km | |
| | Cape Wrath SPA | 49 km | |
| | North Orkney SPA | 50 km | |
| | Lairg and Strathbrora Lochs SPA | 54 km | |
| | Copinsay SPA | 55 km | |
| | West Westray SPA | 70 km | |
| | Auskerry SPA | 74 km | |
| | Handa SPA | 79 km | |
| | Calf of Eday SPA | 81 km | |
| | Papa Westray (North Hill and Holm) SPA | 84 km | |
| | Pentland Firth Islands SPA | 84 km | |
| | Rousay SPA | 84 km | |
| | Cromarty Firth SPA | 85 km | |
| | Assynt Lochs SPA | 88 km | |
| | Inverpolly, Loch Urigill and Nearby Lochs SPA | 90 km | |
| | North Rona and Sula Sgeir SPA | 92 km | |
| | Troup, Pennan and Lion's Heads SPA | 106 km | |
| | Seas off Foula SPA | 137 km | |
| | Buchan Ness to Collieston Coast SPA | 145 km | |

| Corridor name | Corridor name | Corridor name | Corridor name |
|---|---|---|---|
| | Shiant Isles SPA | 165 km | |
| | Foula SPA | 169 km | |
| | Sumburgh Head SPA | 187 km | |
| | Flanan Isles SPA | 205 km | |
| | Noss SPA | 216 km | |
| | Seas off St Kilda SPA | 219 km | |
| | Rum SPA | 221 km | |
| | Canna and Sanday SPA | 234 km | |
| | Fetlar SPA | 251 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 266 km | |
| | St Kilda SPA | 272 km | |
| | Mingulay and Berneray SPA | 302 km | |
| PA_1_to_Birkhill_Wood | Greater Wash SPA | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar (including Alkborough, Chowder Ness, Paull Holmes Strays, Skeffling and Welwick compensation areas) | 4 km | |
| | Flamborough & Filey Coast SPA | 5 km | |
| | Teesmouth and Cleveland Coast SPA/Ramsar (Including compensation area Seal Sands) | 85 km | |
| | Gibraltar Point Ramsar/SPA | 88 km | |
| | The Wash SPA | 89 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 145 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 244 km | |
| | Forth Islands SPA | 273 km | |
| | Fowlsheugh SPA | 330 km | |
| | Buchan Ness to Collieston Coast SPA | 363 km | |
| R4_1_to_Birkhill Wood | Greater Wash SPA | Within the HND corridor | |

| Corridor name | Corridor name | Corridor name | Corridor name |
|---|---|---|---|
| | Humber Estuary SPA/Ramsar (including Alkborough, Chowder Ness, Paull Holmes Strays, Skeffling and Welwick compensation areas) | 4 km | |
| | Flamborough & Filey Coast SPA | 5 km | |
| | Teesmouth and Cleveland Coast SPA/Ramsar (Including compensation area Seal Sands) | 85 km | |
| | Gibraltar Point Ramsar/SPA | 88 km | |
| | The Wash SPA | 89 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 145 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 244 km | |
| | Forth Islands SPA | 273 km | |
| | Fowlsheugh SPA | 330 km | |
| | Buchan Ness to Collieston Coast SPA | 359 km | |
| R4_2_to_Birkhill Wood | Greater Wash SPA | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar (including Alkborough, Chowder Ness, Paull Holmes Strays, Skeffling and Welwick compensation areas) | 4 km | |
| | Flamborough & Filey Coast SPA | 5 km | |
| | Teesmouth and Cleveland Coast SPA/Ramsar (Including compensation area Seal Sands) | 82 km | |
| | Gibraltar Point Ramsar/SPA | 88 km | |
| | The Wash SPA | 89 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 145 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 244 km | |
| | Forth Islands SPA | 273 km | |
| | Fowlsheugh SPA | 330 km | |

| Corridor name | Corridor name | Corridor name | Corridor name |
|---|---|---|---|
| | Buchan Ness to Collieston Coast SPA | 363 km | |
| SW_E1a_to_Lincolnshire_Connection_Node | Greater Wash SPA | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar (including Alkborough, Chowder Ness, Paull Holmes Strays, Skeffling and Welwick compensation areas) | 4 km | |
| | Gibraltar Point SPA/Ramsar | 15 km | |
| | The Wash SPA/Ramsar | 17 km | |
| | North Norfolk Coast SPA/Ramsar | 33 km | |
| | Flamborough & Filey Coast SPA | 37 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 68 km | |
| | Coquet Island SPA | 80 km | |
| | Fowlsheugh SPA | 80 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 80 km | |
| | Farne Islands SPA | 81 km | |
| | Northumbria Coast SPA/Ramsar | 81 km | |
| | Buchan Ness to Collieston Coast SPA | 95 km | |
| | Ythan Estuary and Mekle Loch Ramsar | 96 km | |
| | Teesmouth and Cleveland Coast SPA (Including compensation area Seal Sands) | 98 km | |
| | St Abb's Head to Fast Castle SPA | 104 km | |
| | Forth Islands SPA | 110 km | |
| SW_W1_to_Ballantrae | Ailsa Craig SPA | 7 km | |
| | North Colonsay and Western Cliffs SPA | 23 km | |
| | Coll and Tiree SPA | 37 km | |
| | Larne Lough SPA/Ramsar | 40 km | |
| | Solway Firth SPA | 45 km | |
| | Treshnish Isles SPA | 46 km | |



| Corridor name | Corridor name | Corridor name | Corridor name |
|---|---|---|---|
| | Sound of Gigha SPA | 48 km | |
| | Knapdale lochs SPA | 51 km | |
| | Loch Ken and River Dee Marshes SPA | 52 km | |
| | Belfast Lough SPA/Ramsar | 54 km | |
| | Outer Ards SPA | 54 km | |
| | Strangford Lough SPA | 66 km | |
| | Glas Eileanan SPA | 77 km | |
| | Upper Solway Flats & Marshes Ramsar | 88 km | |
| | Loch Shiel SPA | 94 km | |
| | Rum SPA | 96 km | |
| | Mingulay and Berneray SPA | 97 km | |
| | Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island SPA | 128 km | |
| | Irish Sea Front SPA | 129 km | |
| | Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA | 148 km | |
| | Ribble and Alt Estuaries SPA | 193 km | |
| | Flannan Isles SPA | 203 km | |
| | Seas off St Kilda SPA | 203 km | |
| | Shiant Isles SPA | 251 km | |
| | Grassholm SPA | 370 km | |
| | St Kilda SPA | 576 km | |

## Table 17e Assessment of the potential for changes in prey availability to have an AEoSI - Fifth table

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Shetland_to_Blackhillock | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | These sites were screened in as the cable corridor is located within the foraging |
| | Moray Firth SPA | Within the HNDFUE corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Noss SPA | Within the HNDFUE corridor | ranges for the designated seabird features. Although seabirds associated with these European Sites are likely to be present within the cable corridors, the loss of prey will account for only a small area of the available marine habitats and therefore bird species are unlikely to be sensitive to it and will have high recoverability. It is therefore considered that impacts to the size and distributions of populations are negligible and that conservation objectives of these site will be hindered and thus no AEoSI. |
| | East Caithness Cliffs SPA | 2 km | |
| | Caithness and Sutherland Peatlands SPA/Ramsar | 8 km | |
| | Tips of Corsemaul and Tom Mor SPA | 9 km | |
| | Mousa SPA | 11 km | |
| | Sumburgh Head SPA | 11 km | |
| | Caithness Lochs SPA/Ramsar | 18 km | |
| | North Caithness Cliffs SPA | 18 km | |
| | Fair Isle SPA | 22 km | |
| | Pentland Firth Island SPA | 23 km | |
| | Papa Stour SPA | 25 km | |
| | Otterswick and Graveland SPA | 25 km | |
| | Ronas Hill – North Roe and Tingon SPA/Ramsar | 26 km | |
| | Feltar SPA | 27 km | |
| | Copinsay SPA | 30 km | |
| | Bluemull and Colgrave Sounds SPA | 31 km | |
| | Scapa Flow SPA | 31 km | |
| | Seas off Foula SPA | 34 km | |
| | Troup, Pennan and Lion's Heads SPA | 34 km | |
| | Ramna Stacks and Gruney SPA | 39 km | |
| | North Orkney SPA | 40 km | |
| | Auskerry SPA | 41 km | |
| | Hoy SPA | 42 km | |
| | Foula SPA | 45 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 47 km | |
| | Lairg and Strath Bora Locha SPA | 47 km | |
| | Muir of Dinnet SPA | 47 km | |
| | Cromarty Firth SPA | 49 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Inner Moray Firth SPA/Ramsar | 50 km | |
| | Orkney Mainland Moors SPA | 51 km | |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA/Ramsar | 55 km | |
| | Loch of Strathbeg SPA/Ramsar | 57 km | |
| | Buchan Ness to Collieston Coast SPA | 60 km | |
| | Calf of Eday SPA | 62 km | |
| | Rousay SPA | 67 km | |
| | Marwick Head SPA | 74 km | |
| | Fowlsheugh SPA | 77 km | |
| | West Westray SPA | 77 km | |
| | Papa Westray (North Hill and Holm) SPA | 79 km | |
| | Inverpolly, Loch Urigill and Nearby Lochs SPA | 91 km | |
| | Cape Wrath SPA | 101 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 109 km | |
| | Sule Skerry and Sule Stack SPA | 110 km | |
| | Handa SPA | 114 km | |
| | Forth Islands SPA | 147 km | |
| | North Rona and Sula Sgeir SPA | 176 km | |
| | Shiant Isles SPA | 177 km | |
| | Rum SPA | 194 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 205 km | |
| | Canna and Sanday SPA | 211 km | |
| | Flannan Isles SPA | 250 km | |
| | Seas off St Kilda SPA | 255 km | |
| | Mingulay and Berneray SPA | 284 km | |
| | St Kilda SPA | 304 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Flamborough and Filey Coast SPA | 397 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | **Within the HNDFUE corridor** | |
| | St Abb's Head to Fast Castle SPA | 4 km | |
| | Firth of Forth SPA/Ramsar (Includes compensation area Kennet Pans) | 6 km | |
| | Forth Islands SPA | 10 km | |
| | Isle of May SAC | 19 km | |
| | Lindisfarne SPA/Ramsar | 23 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 23 km | |
| | Northumbria Coast SPA/Ramsar | 24 km | |
| | Farne Islands SPA | 30 km | |
| | Firth of Tay and Eden Estuary SPA | 43 km | |
| | Imperial Dock Lock, Leith SPA | 42 km | |
| SW_E1a_to_Branxton | Firth of Tay and Eden Estuary SPA | 43 km | |
| | Loch Leven SPA | 56 km | |
| | Coquet Island SPA | 65 km | |
| | Fowlsheugh SPA | 80 km | |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA/Ramsar | 87 km | |
| | Troup, Pennan and Lion's Heads SPA | 135 km | |
| | Flamborough and Filey Coast SPA | 201 km | |
| | East Caithness Cliffs SPA | 226 km | |
| | North Caithness Cliffs SPA | 246 km | |
| | Copinsay SPA | 265 km | |
| | Hoy SPA | 270 km | |
| | Calf of Eday SPA | 301 km | |
| | Rousay SPA | 302 km | |

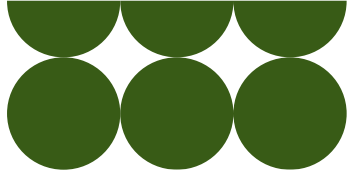
| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | West Westray SPA | 312 km | |
| | Fair Isle SPA | 315 km | |
| | Sule Skerry and Sule Stack SPA | 334 km | |
| | Sumburgh Head SPA | 351 km | |
| | Seas off Foula SPA | 356 km | |
| | Noss SPA | 382 km | |
| | Foula SPA | 385 km | |
| | Fetlar SPA | 430 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 449 km | |
| SW_E1a_to_SW_E1c_2 | Outer Firth of Forth and St Andrews Bay Complex SPA | 71 km | |
| | Fowlsheugh SPA | 80 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 87 km | |
| | Buchan Ness to Collieston Coast SPA | 95 km | |
| | Northumberland Marine SPA | 109 km | |
| | Troup, Pennan and Lion's Heads SPA | 135 km | |
| | East Caithness Cliffs SPA | 226 km | |
| | North Caithness Cliffs SPA | 246 km | |
| | Flamborough and Filey Coast SPA | 258 km | |
| | Copinsay SPA | 265 km | |
| | Hoy SPA | 270 km | |
| | Calf of Eday SPA | 301 km | |
| | Rousay SPA | 302 km | |
| | West Westray SPA | 312 km | |
| | Fair Isle SPA | 315 km | |
| | Sule Skerry and Sule Stack SPA | 334 km | |
| | Sumburgh Head SPA | 351 km | |
| | Noss SPA | 382 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Foula SPA | 385 km | |
| | Fetlar SPA | 430 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 449 km | |
| | Greater Wash SPA | Within the HNDFUE corridor | |
| | Humber Estuary SPA/Ramsar (including Alkborough, Chowder Ness, Paull Holmes Strays, Skeffling and Welwick compensation areas) | 2 km | |
| | Gibraltar Point SPA/Ramsar | 15 km | |
| | The Wash SPA/Ramsar | 18 km | |
| | Flamborough & Filey Coast SPA | 32 km | |
| | North Norfolk Coast SPA/Ramsar | 35 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 68 km | |
| | Ouse Washes SPA/Ramsar | 77 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 79 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Northumbria Coast SPA/Ramsar | 81 km | |
| | Coquet Island SPA | 81 km | |
| | Farne Islands SPA | 81 km | |
| | Lindisfarne SPA/Ramsar | 90 km | |
| | Teesmouth and Cleveland Coast SPA/Ramsar (Including compensation area Seal Sands) | 91 km | |
| | Fowlsheugh SPA | 99 km | |
| | Buchan Ness to Collieston Coast SPA | 102 km | |
| | St Abb`s Head to Fast Castle SPA | 107 km | |
| | Forth Islands SPA | 127 km | |
| | Troup, Pennan and Lion`s Heads SPA | 140 km | |
| | Alde-Ore Estuary SPA | 146 km | |
| | East Caithness Cliffs SPA | 231 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | North Caithness Cliffs SPA | 248 km | |
| | Copinsay SPA | 263 km | |
| | Hoy SPA | 272 km | |
| | Calf of Eday SPA | 298 km | |
| | Rousay SPA | 301 km | |
| | Fair Isle SPA | 307 km | |
| | West Westray SPA | 311 km | |
| | Sumburgh Head SPA | 341 km | |
| | Seas off Foula SPA | 347 km | |
| | Noss SPA | 371 km | |
| | Foula SPA | 378 km | |
| | Fetlar SPA | 418 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 438 km | |
| SW_E1c_1_to_SW_E1c_2 | Outer Firth of Forth and St Andrews Bay Complex SPA | 96 km | |
| | Fowlsheugh SPA | 98 km | |
| | Buchan Ness to Collieston Coast SPA | 101 km | |
| | Northumberland Marine SPA | 121 km | |
| | Troup, Pennan and Lion's Heads SPA | 139 km | |
| | East Caithness Cliffs SPA | 230 km | |
| | North Caithness Cliffs SPA | 247 km | |
| | Flamborough and Filey Coast SPA | 258 km | |
| | Copinsay SPA | 263 km | |
| | Hoy SPA | 272 km | |
| | Calf of Eday SPA | 298 km | |
| | Rousay SPA | 300 km | |
| | Fair Isle SPA | 306 km | |
| | West Westray SPA | 310 km | |
| | Sule Skerry and Sule Stack SPA | 339 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Sumburgh Head SPA | 341 km | |
| | Seas off Foula SPA | 347 km | |
| | Noss SPA | 370 km | |
| | Foula SPA | 377 km | |
| | Fetlar SPA | 418 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 438 km | |
| SW_E1c_2_to_Weston Marsh | The Wash SPA/Ramsar | Within the HNDFUE corridor | |
| | Greater Wash SPA | Within the HNDFUE corridor | |
| | Gibraltar Point SPA/Ramsar | 5 km | |
| | Humber Estuary SPA/Ramsar (including Alkborough, Chowder Ness, Paull Holmes Strays, Skeffling and Welwick compensation areas) | 5 km | |
| | North Norfolk Coast SPA/Ramsar | 23 km | |
| | Flamborough & Filey Coast SPA | 36 km | |
| | Ouse Washes SPA/Ramsar | 37 km | |
| | Upper Nene Valley Gravel Pits SPA/Ramsar | 52 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 73 km | |
| | Northumbria Coast SPA/Ramsar | 86 km | |
| | Coquet Island SPA | 86 km | |
| | Farne Islands SPA | 86 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 90 km | |
| | Lindisfarne SPA/Ramsar | 95 km | |
| | Teesmouth and Cleveland Coast SPA/Ramsar (Including compensation area Seal Sands) | 98 km | |
| | Great Yarmouth North Denes SPA | 98 km | |
| | St Abb`s Head to Fast Castle SPA | 116 km | |
| | Fowlsheugh SPA | 117 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Buchan Ness to Collieston Coast SPA | 124 km | |
| | Alde-Ore Estuary SPA | 127 km | |
| | Forth Islands SPA | 138 km | |
| | Troup, Pennan and Lion`s Heads SPA | 163 km | |
| | East Caithness Cliffs SPA | 254 km | |
| | North Caithness Cliffs SPA | 271 km | |
| | Copinsay SPA | 286 km | |
| | Hoy SPA | 295 km | |
| | Auskerry SPA | 299 km | |
| | Calf of Eday SPA | 321 km | |
| | Rousay SPA | 323 km | |
| | Fair Isle SPA | 327 km | |
| | West Westray SPA | 333 km | |
| | Sumburgh Head SPA | 361 km | |
| | Seas off Foula SPA | 368 km | |
| | Noss SPA | 390 km | |
| | Foula SPA | 398 km | |
| | Fetlar SPA | 436 km | |
| | Ronas Hill - North Roe and Tington SPA | 437 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 457 km | |
| SW_E2a_1_to_SW_E2a_2 | Buchan Ness to Collieston Coast SPA | 104 km | |
| | Troup, Pennan and Lion's Heads SPA | 133 km | |
| | Fowlsheugh | 140 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 161 km | |
| | Northumberland Marine SPA | 193 km | |
| | East Caithness Cliffs SPA | 210 km | |
| | North Caithness Cliffs SPA | 220 km | |
| | Copinsay SPA | 225 km | |



| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Hoy SPA | 243 km | |
| | Fair Isle SPA | 247 km | |
| | Calf of Eday SPA | 255 km | |
| | Rousay SPA | 260 km | |
| | West Westray SPA | 270 km | |
| | Sumburgh Head SPA | 278 km | |
| | Seas off Foula SPA | 287 km | |
| | Noss SPA | 305 km | |
| | Sule Skerry and Sule Stack SPA | 315 km | |
| | Foula SPA | 319 km | |
| | Flamborough and Filey Coast SPA | 328 km | |
| | Fetlar SPA | 350 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 371 km | |

## Table 17f Assessment for the potential for changes in prey availability to have an AEoSI - Sixth table

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E2a_2_to_Near Richborough | Thanet Coast and Sandwich Bay SPA/Ramsar | Within the HNDFUE corridor | These sites were screened in as the cable corridor is located within the foraging ranges for the designated seabird features. Although seabirds associated with these European Sites are likely to be present within the cable corridors, the loss of prey will account for only a small area of the available marine habitats and therefore bird species are unlikely to be sensitive to it and will have |
| | Outer Thames Estuary SPA | 4 km | |
| | Dungeness, Romney Marsh and Rye Bay SPA/Ramsar (Including compensation area Rye Harbour Farm) | 32 km | |
| | Foulness (Mid-Essex Coast Phase 5) SPA/Ramsar | 32 km | |
| | Medway Estuary and Marshes SPA/Ramsar | 36 km | |
| | Greater Wash SPA | 46 km | |
| | Colne Estuary (Mid-Essex Coast Phase 2) SPA/Ramsar | 50 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Blackwater Estuary (Mid-Essex Coast Phase 4) SPA/Ramsar | 51 km | high recoverability. It is therefore considered that impacts to the size and distributions of populations are negligible and that conservation objectives of these site will be hindered and thus no AEoSI. |
| | Alde-Ore Estuary SPA/Ramsar | 51 km | |
| | Hamford Water SPA | 56 km | |
| | Hamford Water SPA/Ramsar | 57 km | |
| | Minsmere-Walberswick SPA/Ramsar | 58 km | |
| | Abberton Reservoir SPA/Ramsar | 60 km | |
| | Great Yarmouth North Denes SPA | 61 km | |
| | Breydon Water SPA/Ramsar | 63 km | |
| | Benacre to Easton Bavents SPA | 63 km | |
| | Stour and Orwell Estuaries SPA/Ramsar (including compensation areas Trimley Marsh and Deveraux Farm) | 64 km | |
| | Flamborough and Filey Coast SPA | 89 km | |
| | Buchan Ness to Collieston Coast SPA | 116 km | |
| | Fowlsheugh SPA | 143 km | |
| | Troup, Pennan and Lion`s Heads SPA | 147 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 153 km | |
| | Northumberland Marine SPA | 156 km | |
| | Forth Islands SPA | 197 km | |
| | East Caithness Cliffs SPA | 229 km | |
| | North Caithness Cliffs SPA | 239 km | |
| | Copinsay SPA | 245 km | |
| | Hoy SPA | 263 km | |
| | Fair Isle SPA | 270 km | |
| | Calf of Eday SPA | 276 km | |
| | Rousay SPA | 281 km | |
| | West Westray SPA | 291 km | |
| | Sumburgh Head SPA | 300 km | |

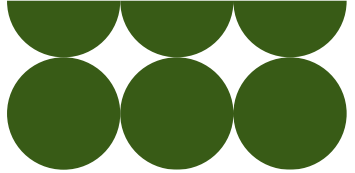
| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Seas off Foula SPA | 310 km | |
| | Noss SPA | 326 km | |
| | Foula SPA | 341 km | |
| | Fetlar SPA | 371 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 392 km | |
| | **Outer Firth of Forth and St Andrews Bay Complex SPA** | **96 km** | |
| | Fowlsheugh SPA | 98 km | |
| | Buchan Ness to Collieston Coast SPA | 101 km | |
| | Northumberland Marine SPA | 129 km | |
| | Troup, Pennan and Lion's Heads SPA | 138 km | |
| | East Caithness Cliffs SPA | 226 km | |
| | North Caithness Cliffs SPA | 238 km | |
| | Copinsay SPA | 244 km | |
| | Hoy SPA | 261 km | |
| | Fair Isle SPA | 269 km | |
| **SW_E2a_2_to_SW_E1c_1** | Calf of Eday SPA | 275 km | |
| | Flamborough and Filey Coast SPA | 276 km | |
| | Rousay SPA | 280 km | |
| | West Westray SPA | 290 km | |
| | Sumburgh Head SPA | 299 km | |
| | Seas off Foula SPA | 309 km | |
| | Noss SPA | 326 km | |
| | Sule Skerry and Sule Stack SPA | 333 km | |
| | Foula SPA | 340 km | |
| | Fetlar SPA | 371 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 392 km | |
| SW_E2b_to_SW_E2a_1 | Buchan Ness to Collieston Coast SPA | 67 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA/Ramsar | 73 km | |
| | Loch of Strathbeg SPA/Ramsar | 77 km | |
| | Troup, Pennan and Lion's Heads SPA | 97 km | |
| | Fowlsheugh SPA | 107 km | |
| | Outer Firth of Forth and St Andrews Bay Complex | 149 km | |
| | Forth Islands SPA | 176 km | |
| | East Caithness Cliffs SPA | 179 km | |
| | North Caithness Cliffs SPA | 191 km | |
| | Northumberland Marine SPA | 195 km | |
| | Copinsay SPA | 199 km | |
| | Hoy SPA | 215 km | |
| | Calf of Eday SPA | 232 km | |
| | Fair Isle SPA | 235 km | |
| | Rousay SPA | 236 km | |
| | West Westray SPA | 246 km | |
| | Sule Skerry and Sule Stack SPA | 285 km | |
| | Flamborough and Filey Coast SPA | 347 km | |
| | Sumburgh Head SPA | 269 km | |
| | Seas off Foula SPA | 275 km | |
| | Noss SPA | 298 km | |
| | Foula SPA | 306 km | |
| | Fetlar SPA | 345 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 365 km | |
| SW_E2a_2_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | 6 km | |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA/Ramsar | 8 km | |
| | Moray Firth SPA | 49 km | |
| | Fowlsheugh SPA | 61 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Tips of Corsemaul and Tom Mor SPA | 62 km | |
| | Troup, Pennan and Lion's Heads SPA | 62 km | |
| | Muir of Dinnet SPA | 73 km | |
| | Buchan Ness to Collieston Coast SPA | 95 km | |
| | Outer Firth of Forth and St Andrews Bay Complex | 108 km | |
| | East Caithness Cliffs SPA | 113 km | |
| | North Caithness Cliffs SPA | 132 km | |
| | Forth Islands SPA | 145 km | |
| | Copinsay SPA | 153 km | |
| | Hoy SPA | 157 km | |
| | Rousay SPA | 190 km | |
| | Calf of Eday SPA | 191 km | |
| | Northumberland Marine SPA | 192 km | |
| | West Westray SPA | 201 km | |
| | Fair Isle SPA | 215 km | |
| | Sule Skerry and Sule Stack SPA | 222 km | |
| | Sumburgh Head SPA | 254 km | |
| | Seas off Foula SPA | 255 km | |
| | Foula SPA | 282 km | |
| | Noss SPA | 286 km | |
| | Fetlar SPA | 334 km | |
| | Flamborough and Filey Coast SPA | 249 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 354 km | |
| SW_E3_to_Fiddes | Fowlsheugh SPA | 3 km | |
| | Montrose Basin SPA/Ramsar | 11 km | |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA/Ramsar | 25 km | |
| | Firth of Tay & Eden Estuary SPA | 41 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Buchan Ness to Collieston Coast SPA | 46 km | |
| | Firth of Forth Ramsar/SPA | 59 km | |
| | Forth Islands SPA | 65 km | |
| | Tips of Corsemaul and Tom Mor SPA | 67 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 71 km | |
| | Loch of Strathbeg SPA/Ramsar | 74 km | |
| | Troup, Pennan and Lion's Heads SPA | 80 km | |
| | Loch Leven SPA | 90 km | |
| | St Abb's Head to Fast Castle SPA | 93 km | |
| | Northumberland Marine SPA | 117 km | |
| | East Caithness Cliffs SPA | 151 km | |
| | North Caithness Cliffs SPA | 186 km | |
| | Hoy SPA | 209 km | |
| | Copinsay SPA | 215 km | |
| | Rousay SPA | 248 km | |
| | Calf of Eday SPA | 253 km | |
| | West Westray SPA | 260 km | |
| | Sule Skerry and Sule Stack SPA | 262 km | |
| | Fair Isle SPA | 278 km | |
| | Flamborough and Filey Coast SPA | 303 km | |
| | Sumburgh Head SPA | 316 km | |
| | Seas off Foula SPA | 318 km | |
| | Foula SPA | 347 km | |
| | Noss SPA | 347 km | |
| | Fetlar SPA | 395 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 415 km | |
| SW_N2_to_Near_Dounreay | Caithness and Sutherland Peatlands SPA/Ramsar | Within the HNDFUE corridor | |
| | North Caithness Cliffs SPA | Within the HNDFUE corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Caithness Lochs SPA/Ramsar | 3 km | |
| | Cape Wrath SPA | 8 km | |
| | Sule Skerry and Sule Stack SPA | 25 km | |
| | North Rona and Sula Sgeir SPA | 26 km | |
| | Hoy SPA | 30 km | |
| | Scapa Flow SPA | 34 km | |
| | Handa SPA | 35 km | |
| | East Caithness Cliffs SPA | 36 km | |
| | Moray Firth SPA | 43 km | |
| | Lairg and Strath Brora Lochs SPA | 51 km | |
| | Assynt Lochs SPA | 55 km | |
| | Marwick Head SPA | 56 km | |
| | Lewis Peatlands SPA/Ramsar | 57 km | |
| | North Orkney SPA | 57 km | |
| | Copinsay SPA | 64 km | |
| | Rousay SPA | 69 km | |
| | Inverpolly, Loch Urigill and Nearby Lochs SPA | 70 km | |
| | Auskerry SPA | 82 km | |
| | West Westray SPA | 82 km | |
| | Priest Island (Summer Isles) SPA | 87 km | |
| | Calf of Eday SPA | 89 km | |
| | Papa Westray (North Hill and Holm) SPA | 96 km | |
| | Shiant Isles SPA | 110 km | |
| | Troup, Pennan and Lion's Heads SPA | 124 km | |
| | Flannan Isles SPA | 129 km | |
| | Seas off St Kilda SPA | 145 km | |
| | Fair Isle SPA | 154 km | |
| | Seas off Foula SPA | 156 km | |



| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Buchan Ness to Collieston Coast SPA | 164 km | |
| | Foula SPA | 187 km | |
| | Rum SPA | 191 km | |
| | Sumburgh Head SPA | 195 km | |
| | St Kilda SPA | 197 km | |
| | Canna and Sanday SPA | 199 km | |
| | Noss SPA | 227 km | |
| | Mingulay and Berneray SPA | 252 km | |
| | Fetlar SPA | 266 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 283 km | |

## Table 17g Assessment of the potential for changes in prey availability to have an AEoSI – Seventh table

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_N3_to_Arnish | Lewis Peatlands SPA/Ramsar | Within the HNDFUE Corridor | These sites were screened in as the cable corridor is located within the foraging ranges for the designated seabird features. Although seabirds associated with these European Sites are likely to be present within the cable corridors, the loss of prey will account for only a small area of the available marine habitats and therefore bird species are unlikely to be sensitive to it and will have high recoverability. It is therefore considered that impacts to the size and distributions of populations are negligible and that conservation objectives of these site will be hindered and thus no AEoSI. |
| | The Shiant Isles SPA | 27 km | |
| | North Rona and Sula Sgeir SPA | 29 km | |
| | Handa SPA | 32 km | |
| | West Coast of the Outer Hebrides SPA | 36 km | |
| | Assynt Lochs SPA | 40 km | |
| | Cape Wrath SPA | 45 km | |
| | Inverpolly, Loch Urigill and Nearby Lochs SPA | 51 km | |
| | Priest Island (Summer Isles) SPA | 51 km | |
| | Lairg and Strathbrora Lochs SPA | 54 km | |
| | Flannan Isles SPA | 60 km | |
| | Wester Ross Lochs SPA | 61 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Loch Maree SPA/Ramsar | 67 km | |
| | Seas off St Kilda SPA | 67 km | |
| | Caithness and Sutherland Peatlands SPA | 68 km | |
| | Mointeach Scadabhaigh SPA | 77 km | |
| | Sule Skerry and Sule Stack SPA | 93 km | |
| | Monach Isles SPA | 97 km | |
| | North Caithness Cliffs SPA | 110 km | |
| | Rum SPA | 119 km | |
| | Canna and Sanday SPA | 121 km | |
| | East Caithness Cliffs SPA | 132 km | |
| | Hoy SPA | 142 km | |
| | Mingulay and Berneray SPA | 163 km | |
| | Rousay SPA | 171 km | |
| | West Westray SPA | 182 km | |
| | Copinsay SPA | 183 km | |
| | Calf of Eday SPA | 194 km | |
| | Seas off Foula SPA | 226 km | |
| | Fair Isle SPA | 262 km | |
| | Foula SPA | 271 km | |
| | Sumburgh Head SPA | 298 km | |
| | Rathlin Island SPA | 317 km | |
| | Noss SPA | 325 km | |
| | Ailsa Craig SPA | 331 km | |
| | Fetlar SPA | 353 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 366 km | |
| SW_NE1a_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Noss SPA | 5 km | |
| | Papa Stour SPA | 26 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Mousa SPA | 26 km | |
| | Fetlar SPA | 27 km | |
| | Ronas Hill - North Roe and Tingon Ramsar | 27 km | |
| | Seas off Foula SPA | 35 km | |
| | Sumburgh Head SPA | 38 km | |
| | Ramna Stacks and Gruney SPA | 39 km | |
| | Foula SPA | 45 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 46 km | |
| | Fair Isle SPA | 80 km | |
| | Calf of Eday SPA | 138 km | |
| | West Westray SPA | 145 km | |
| | Rousay SPA | 153 km | |
| | Copinsay SPA | 169 km | |
| | Hoy SPA | 189 km | |
| | North Caithness Cliffs SPA | 202 km | |
| | Sule Skerry and Sule Stack SPA | 220 km | |
| | East Caithness Cliffs SPA | 229 km | |
| | Cape Wrath SPA | 275 km | |
| | Troup, Pennan and Lion's Heads SPA | 280 km | |
| | North Rona and Sula Sgeir SPA | 285 km | |
| | Buchan Ness to Collieston Coast SPA | 296 km | |
| | Handa SPA | 305 km | |
| | Fowlsheugh SPA | 360 km | |
| | Shiant Isles SPA | 390 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 407 km | |
| | Forth Islands SPA | 444 km | |
| | St Abb's Head to Fast Castle SPA | 470 km | |
| | Northumberland Marine SPA | 488 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE1b_to_Shetland | Flamborough and Filey Coast SPA | 648 km | |
| | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Noss SPA | 7 km | |
| | Papa Stour SPA | 26 km | |
| | Mousa SPA | 27 km | |
| | Fetlar SPA | 26 km | |
| | Ronas Hill - North Roe and Tingon SPA / Ramsar | 27 km | |
| | Seas off Foula SPA | 35 km | |
| | Ramna Stacks and Gruney SPA | 39 km | |
| | Sumburgh Head SPA | 40 km | |
| | Foula SPA | 45 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 46 km | |
| | Fair Isle SPA | 79 km | |
| | Calf of Eday SPA | 138 km | |
| | West Westray SPA | 145 km | |
| | Rousay SPA | 153 km | |
| | Copinsay SPA | 169 km | |
| | Hoy SPA | 189 km | |
| | North Caithness Cliffs SPA | 202 km | |
| | Sule Skerry and Sule Stack SPA | 220 km | |
| | East Caithness Cliffs SPA | 229 km | |
| | Cape Wrath SPA | 275 km | |
| | Troup, Pennan and Lion's Heads SPA | 283 km | |
| | North Rona and Sula Sgeir SPA | 285 km | |
| | Buchan Ness to Collieston Coast SPA | 299 km | |
| | Handa SPA | 305 km | |
| | Fowlsheugh SPA | 363 km | |
| | Shiant Isles SPA | 390 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 410 km | |
| | Forth Islands SPA | 448 km | |
| | St Abb's Head to Fast Castle SPA | 473 km | |
| | Northumberland Marine SPA | 492 km | |
| | Flamborough and Filey Coast SPA | 651 km | |
| | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Noss SPA | 8.82 km | |
| | Papa Stour SPA | 26 km | |
| | Mousa SPA | 27 km | |
| | Fetlar SPA | 26 km | |
| | Ronas Hill - North Roe and Tingon SPA / Ramsar | 27 km | |
| | Seas off Foula SPA | 35 km | |
| | Ramna Stacks and Gruney SPA | 39 km | |
| | Sumburgh Head SPA | 40 km | |
| | Foula SPA | 45 km | |
| SW_NE1c_to_Shetland | Hermaness, Saxa Vord and Valla Field SPA | 45 km | |
| | Fair Isle SPA | 79 km | |
| | Calf of Eday SPA | 138 km | |
| | West Westray SPA | 145 km | |
| | Rousay SPA | 153 km | |
| | Copinsay SPA | 169 km | |
| | Hoy SPA | 189 km | |
| | North Caithness Cliffs SPA | 202 km | |
| | Sule Skerry and Sule Stack SPA | 220 km | |
| | East Caithness Cliffs SPA | 229 km | |
| | Cape Wrath SPA | 275 km | |
| | North Rona and Sula Sgeir SPA | 285 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Troup, Pennan and Lion's Heads SPA | 289 km | |
| | Handa SPA | 305 km | |
| | Buchan Ness to Collieston Coast SPA | 306 km | |
| | Fowlsheugh SPA | 371 km | |
| | Shiant Isles SPA | 390 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 417 km | |
| | Forth Islands SPA | 455 km | |
| | St Abb's Head to Fast Castle SPA | 481 km | |
| | Northumberland Marine SPA | 499 km | |
| | Flamborough and Filey Coast SPA | 657 km | |
| SW_NE2_to_Spittal | Caithness and Sutherland Peatlands SPA/Ramsar | Within HNDFUE corridor | |
| | Caithness Lochs SPA/Ramsar | Within HNDFUE corridor | |
| | North Caithness Cliffs SPA | 5 km | |
| | East Caithness Cliffs SPA | 6 km | |
| | Pentland Firth Islands SPA | 14 km | |
| | Copinsay SPA | 20 km | |
| | Fair Isle SPA | 22 km | |
| | Scapa Flow SPA | 24 km | |
| | Hoy SPA | 25 km | |
| | Auskerry SPA | 29 km | |
| | North Orkney SPA | 31 km | |
| | Moray Firth SPA | 33 km | |
| | Orkney Mainland Moor SPA | 43 km | |
| | Calf of Eday SPA | 50 km | |
| | Rousay SPA | 55 km | |
| | Lairg and Strath Brora Lochs SPA | 56 km | |
| | Marwick Head SPA | 62 km | |
| | West Westray SPA | 64 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Papa Westray (North Hill and Holm) SPA | 67 km | |
| | Cape Wrath SPA | 77 km | |
| | Sule Skerry and Sule Stack SPA | 80 km | |
| | Inverpolly, Loch Urigill and Nearby Lochs SPA (Scotland) | 93 km | |
| | Troup, Pennan and Lion's Heads SPA | 93 km | |
| | Assynt Lochs SPA | 95 km | |
| | Handa SPA | 97 km | |
| | Hoy SPA | 104 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 109 km | |
| | Calf of Eday SPA | 124 km | |
| | Rousay SPA | 127 km | |
| | Fair Isle SPA | 144 km | |
| | Forth Islands SPA | 146 km | |
| | Sule Skerry and Sule Stack SPA | 176 km | |
| | Seas off Foula SPA | 184 km | |
| | Sumburgh Head SPA | 184 km | |
| | Northumberland Marine | 193 km | |
| | Foula SPA | 211 km | |
| | Noss SPA | 218 km | |
| | Fetlar SPA | 266 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 285 km | |
| | Flamborough and Filey Coast SPA | 372 km | |

## Table 17h Assessment of the potential for changes in prey availability to have an AEoS - Eighth table

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE3_to_New_Deer_2 | Troup, Pennan and Lion's Heads SPA | 2 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Loch of Strathbeg SPA/Ramsar | 7 km | These sites were screened in as the cable corridor is located within the foraging ranges for the designated seabird features. Although seabirds associated with these European Sites are likely to be present within the cable corridors, the loss of prey will account for only a small area of the available marine habitats and therefore bird species are unlikely to be sensitive to it and will have high recoverability. It is therefore considered that impacts to the size and distributions of populations are negligible and that conservation objectives of these site will be hindered and thus no AEoSI. |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA/Ramsar | 19 km | |
| | Buchan Ness to Collieston Coast SPA | 23 km | |
| | Moray Firth SPA | 28 km | |
| | Hoy SPA | 30 km | |
| | Muir of Dinnet SPA | 38 km | |
| | Tips of Corsemaul and Tom Mor SPA | 39 km | |
| | Copinsay SPA | 46 km | |
| | Pentland Firth Islands SPA | 46 km | |
| | North Caithness Cliffs SPA | 48 km | |
| | Scapa Flow SPA | 49 km | |
| | East Caithness Cliffs SPA | 50 km | |
| | Caithness and Sutherland Peatlands SPA | 53 km | |
| | Caithness Lochs SPA/Ramsar | 55 km | |
| | North Orkney SPA | 56 km | |
| | Fowlsheugh SPA | 58 km | |
| | Auskerry SPA | 59 km | |
| | Orkney Mainland Moor SPA | 68 km | |
| | Calf of Eday SPA | 81 km | |
| | Rousay SPA | 83 km | |
| | Marwick Head SPA | 92 km | |
| | West Westray SPA | 93 km | |
| | Inner Moray Firth SPA/Ramsar | 95 km | |
| | Papa Westray (North Hill and Holm) SPA | 98 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 104 km | |
| | Fair Isle SPA | 109 km | |
| | Sule Skerry and Sule Stack SPA | 140 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Forth Islands SPA | 143 km | |
| | Seas off Foula SPA | 146 km | |
| | Cape Wrath SPA | 151 km | |
| | Sumburgh Head SPA | 152 km | |
| | St Abb's Head to Fast Castle SPA | 173 km | |
| | Handa SPA | 173 km | |
| | Foula SPA | 173 km | |
| | Noss SPA | 186 km | |
| | Northumberland Marine SPA | 195 km | |
| | Fetlar SPA | 233 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 252 km | |
| | Flamborough and Filey Coast SPA | 380 km | |
| SW_NE4_to_New Deer | Moray Firth SPA | 7 km | |
| | Troup, Pennan and Lion`s Heads SPA | 7 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 18 km | |
| | Buchan Ness to Collieston Coast SPA | 23 km | |
| | Loch of Strathbeg SPA | 23 km | |
| | Tips of Corsemaul and Tom Mor SPA | 30 km | |
| | East Caithness Cliffs SPA | 36 km | |
| | Caithness and Sutherland Peatlands SPA | 43 km | |
| | North Caithness Cliffs SPA | 50 km | |
| | Muir of Dinnet SPA/Ramsar | 54 km | |
| | Pentland Firth Islands SPA | 57 km | |
| | Fowlsheugh SPA | 58 km | |
| | Scapa Flow SPA | 69 km | |
| | Copinsay SPA | 73 km | |
| | Hoy SPA | 74 km | |
| | Inner Moray Firth SPA/Ramsar | 79 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | North Orkney SPA | 80 km | |
| | Cromarty Firth SPA | 82 km | |
| | Orkney Mainland Moors SPA | 88 km | |
| | Auskerry SPA | 89 km | |
| | Lairg and Strath Brora Lochs SPA | 93 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 101 km | |
| | Rousay SPA | 108 km | |
| | Calf of Eday SPA | 111 km | |
| | West Westray SPA | 119 km | |
| | Forth Islands SPA | 140 km | |
| | Sule Skerry and Sule Stack SPA | 143 km | |
| | Fair Isle SPA | 148 km | |
| | Seas off Foula SPA | 182 km | |
| | Sumburgh Head SPA | 192 km | |
| | Northumberland Marine SPA | 192 km | |
| | Foula SPA | 209 km | |
| | Noss SPA | 226 km | |
| | Fetlar SPA | 272 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 292 km | |
| | Flamborough and Filey Coast SPA | 377 km | |
| SW_NE6_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | |
| | Buchan Ness to Collieston Coast SPA | 5 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 9 km | |
| | Troup, Pennan and Lion`s Heads SPA | 12 km | |
| | Moray Firth SPA | 43 km | |
| | Tips of Corsemaul and Tom Mor SPA | 61 km | |
| | Fowlsheugh SPA | 62 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Muir of Dinnet SPA | 73 km | |
| | East Caithness Cliffs SPA | 75 km | |
| | North Caithness Cliffs SPA | 81 km | |
| | Caithness and Sutherland Peatlands SPA | 82 km | |
| | Pentland Firth Islands SPA | 84 km | |
| | Copinsay SPA | 89 km | |
| | Scapa Flow SPA | 91 km | |
| | North Orkney SPA | 99 km | |
| | Hoy SPA | 104 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 109 km | |
| | Calf of Eday SPA | 124 km | |
| | Rousay SPA | 127 km | |
| | West Westray SPA | 137 km | |
| | Fair Isle SPA | 144 km | |
| | Forth Islands SPA | 146 km | |
| | St Abb's Head to Fast Castle SPA | 172 km | |
| | Sule Skerry and Sule Stack SPA | 176 km | |
| | Seas off Foula SPA | 184 km | |
| | Sumburgh Head SPA | 184 km | |
| | Northumberland Marine SPA | 193 km | |
| | Foula SPA | 211 km | |
| | Noss SPA | 218 km | |
| | Fetlar SPA | 266 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 285 km | |
| | Flamborough and Filey Coast SPA | 372 km | |
| SW_NE7_to_Peterhead DCSS | Buchan Ness to Collieston Coast SPA | 3 km | |
| | Loch of Strathbeg SPA/Ramsar | 6 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 9 km | |
| | Troup, Pennan and Lion`s Heads SPA | 22 km | |
| | Moray Firth SPA | 50 km | |
| | Fowlsheugh SPA | 62 km | |
| | Tips of Corsemaul and Tom Mor SPA | 63 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 109 km | |
| | East Caithness Cliffs SPA | 113 km | |
| | North Caithness Cliffs SPA | 132 km | |
| | Copinsay SPA | 139 km | |
| | Forth Islands SPA | 146 km | |
| | Fair Isle SPA | 155 km | |
| | Hoy SPA | 157 km | |
| | Calf of Eday SPA | 165 km | |
| | Rousay SPA | 172 km | |
| | St Abb's Head to Fast Castle SPA | 172 km | |
| | West Westray SPA | 181 km | |
| | Sumburgh Head SPA | 187 km | |
| | Northumberland Marine SPA | 193 km | |
| | Seas off Foula SPA | 195 km | |
| | Noss SPA | 216 km | |
| | Sule Skerry and Sule Stack SPA | 222 km | |
| | Foula SPA | 226 km | |
| | Fetlar SPA | 263 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 283 km | |
| | Flamborough and Filey Coast SPA | 371 km | |
| SW_NE8_to_Peterhead 1 | Buchan Ness to Collieston Coast SPA | Within the HNDFUE corridor | |
| | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 5 km | |
| | Troup, Pennan and Lion`s Heads SPA | 12 km | |
| | Moray Firth SPA | 44 km | |
| | Tips of Corsemaul and Tom Mor SPA | 59 km | |
| | Fowlsheugh SPA | 60 km | |
| | Muir of Dinnet SPA / Ramsar | 71 km | |
| | East Caithness Cliffs SPA | 88 km | |
| | Copinsay SPA | 93 km | |
| | Caithness and Sutherland Peatlands SPA | 95 km | |
| | North Caithness Cliffs SPA | 95 km | |
| | Pentland Firth Islands SPA | 97 km | |
| | Scapa Flow SPA | 99 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 107 km | |
| | Hoy SPA | 118 km | |
| | Fair Isle SPA | 119 km | |
| | Calf of Eday SPA | 121 km | |
| | Rousay SPA | 127 km | |
| | West Westray SPA | 136 km | |
| | Forth Islands SPA | 144 km | |
| | Sumburgh Head SPA | 156 km | |
| | Seas off Foula SPA | 160 km | |
| | St Abb's Head to Fast Castle SPA | 170 km | |
| | Noss SPA | 188 km | |
| | Northumberland Marine SPA | 190 km | |
| | Foula SPA | 190 km | |
| | Sule Skerry and Sule Stack SPA | 190 km | |
| | Fetlar SPA | 236 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Aspen_to_Beech | Hermaness, Saxa Vord and Valla Field SPA | 255 km | |
| | Flamborough and Filey Coast SPA | 367 km | |
| | Loch of Strathbeg SPA | 95 km | |
| | Troup, Pennan and Lion's Heads SPA | 113 km | |
| | Fowlsheugh SPA | 144 km | |
| | East Caithness Cliffs SPA | 179 km | |
| | North Caithness Cliffs SPA | 186 km | |
| | Copinsay SPA | 186 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 189 km | |
| | Fair Isle SPA | 207 km | |
| | Hoy SPA | 208 km | |
| | Calf of Eday SPA | 216 km | |
| | Forth Islands SPA | 217 km | |
| | Rousay SPA | 222 km | |
| | St Abb's Head to Fast Castle SPA | 230 km | |
| | West Westray SPA | 231 km | |
| | Northumberland Marine SPA | 236 km | |
| | Sumburgh Head SPA | 237 km | |
| | Seas off Foula SPA | 247 km | |
| | Noss SPA | 262 km | |
| | Foula SPA | 279 km | |
| | Sule Skerry and Sule Stack SPA | 281 km | |
| | Cape Wrath SPA | 282 km | |
| | Handa SPA | 296 km | |
| | Fetlar SPA | 307 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 328 km | |
| | North Rona and Sula Sgeir SPA | 355 km | |
| | Flamborough and Filey Coast SPA | 385 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Alde-Ore Estuary SPA | 628 km | |

## Table 17i Assessment of the potential for changes in prey availability to have an AEoSI - Ninth table

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Aspen_to_Fetteresso | Montrose Basin SPA/Ramsar | 2 km | These sites were screened in as the cable corridor is located within the foraging ranges for the designated seabird features. Although seabirds associated with these European Sites are likely to be present within the cable corridors, the loss of prey will account for only a small area of the available marine habitats and therefore bird species are unlikely to be sensitive to it and will have high recoverability. It is therefore considered that impacts to the size and distributions of populations are negligible and that conservation objectives of these site will be hindered and thus no AEoSI. |
| | Fowlsheugh SPA | 3 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 20 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 22 km | |
| | Buchan Ness to Collieston Coast SPA | 29 km | |
| | Loch of Strathbeg SPA/Ramsar | 45 km | |
| | Forth Islands SPA | 46 km | |
| | Tips of Corsemaul and Tom Mor SPA | 64 km | |
| | Troup, Pennan and Lion`s Heads SPA | 65 km | |
| | Loch Leven SPA | 80 km | |
| | Moray Firth SPA | 82 km | |
| | St Abb`s Head to Fast Castle SPA | 87 km | |
| | Imperial Dock Lock, Leith SPA | 95 km | |
| | Northumberland Marine SPA | 111 km | |
| | East Caithness Cliffs SPA | 147 km | |
| | North Caithness Cliffs SPA | 168 km | |
| | Copinsay SPA | 181 km | |
| | Hoy SPA | 193 km | |
| | Fair Isle SPA | 207 km | |
| | Calf of Eday SPA | 214 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Rousay SPA | 219 km | |
| | Handa SPA | 227 km | |
| | West Westray SPA | 229 km | |
| | Cape Wrath SPA | 231 km | |
| | Sumburgh Head SPA | 238 km | |
| | Seas off Foula SPA | 247 km | |
| | Sule Skerry and Sule Stack SPA | 258 km | |
| | Noss SPA | 265 km | |
| | Foula SPA | 279 km | |
| | Flamborough and Filey Coast SPA | 301 km | |
| | North Rona and Sula Sgeir SPA | 311 km | |
| | Fetlar SPA | 311 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 332 km | |
| | Alde-Ore Estuary SPA | 564 km | |
| | Buchan Ness to Collieston Coast SPA | 205 km | |
| | Troup, Pennan and Lion's Heads SPA | 225 km | |
| | Fowlsheugh SPA | 251 km | |
| | Fair Isle SPA | 251 km | |
| | Sumburgh Head SPA | 266 km | |
| | Copinsay SPA | 267 km | |
| | East Caithness Cliffs SPA | 278 km | |
| Beech_to_Beech MPI | Outer Firth of Forth and St Andrews Bay Complex SPA | 278 km | |
| | North Caithness Cliffs SPA | 279 km | |
| | Noss SPA | 282 km | |
| | Seas off Foula SPA | 284 km | |
| | Calf of Eday SPA | 286 km | |
| | Rousay SPA | 296 km | |
| | Hoy SPA | 298 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | West Westray SPA | 304 km | |
| | Northumberland Marine SPA | 307 km | |
| | Forth Islands SPA | 313 km | |
| | Foula SPA | 316 km | |
| | St Abb's Head to Fast Castle SPA | 316 km | |
| | Fetlar SPA | 318 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 340 km | |
| | Sule Skerry and Sule Stack SPA | 369 km | |
| | Flamborough and Filey Coast SPA | 421 km | |
| | North Rona and Sula Sgeir SPA | 448 km | |
| | Alde-Ore Estuary SPA | 635 km | |
| Beech_to_Cedar | Buchan Ness to Collieston Coast SPA | 141 km | |
| | Fowlsheugh SPA | 167 km | |
| | Seas off Foula SPA | 171 km | |
| | Troup, Pennan and Lion's Heads SPA | 172 km | |
| | Northumberland Marine SPA | 192 km | |
| | St Abb's Head to Fast Castle SPA | 208 km | |
| | Forth Islands SPA | 213 km | |
| | East Caithness Cliffs SPA | 251 km | |
| | Fair Isle SPA | 255 km | |
| | Copinsay SPA | 259 km | |
| | North Caithness Cliffs SPA | 259 km | |
| | Sumburgh Head SPA | 271 km | |
| | Hoy SPA | 281 km | |
| | Calf of Eday SPA | 286 km | |
| | Noss SPA | 287 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 289 km | |
| | Rousay SPA | 293 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | West Westray SPA | 302 km | |
| | Flamborough and Filey Coast SPA | 306 km | |
| | Foula SPA | 320 km | |
| | Fetlar SPA | 323 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 345 km | |
| | Sule Skerry and Sule Stack SPA | 354 km | |
| | North Rona and Sula Sgeir SPA | 427 km | |
| | Alde-Ore Estuary SPA | 535 km | |
| Cedar_to_Aspen | Buchan Ness to Collieston Coast SPA | 92 km | |
| | Loch of Strathbeg SPA/Ramsar | 95 km | |
| | Troup, Pennan and Lion's Heads SPA | 113 km | |
| | Fowlsheugh SPA | 144 km | |
| | Seas off Foula SPA | 171 km | |
| | East Caithness Cliffs SPA | 179 km | |
| | North Caithness Cliffs SPA | 186 km | |
| | Copinsay SPA | 186 km | |
| | Northumberland Marine SPA | 192 km | |
| | Fair Isle SPA | 207 km | |
| | St Abb's Head to Fast Castle SPA | 208 km | |
| | Hoy SPA | 208 km | |
| | Forth Islands SPA | 213 km | |
| | Calf of Eday SPA | 216 km | |
| | Rousay SPA | 222 km | |
| | West Westray SPA | 231 km | |
| | Sumburgh Head SPA | 238 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 247 km | |
| | Noss SPA | 265 km | |
| | Foula SPA | 279 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Sule Skerry and Sule Stack SPA | 281 km | |
| | Flamborough and Filey Coast SPA | 306 km | |
| | Fetlar SPA | 311 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 332 km | |
| | North Rona and Sula Sgeir SPA | 355 km | |
| | Alde-Ore Estuary SPA | 535 km | |
| Cedar_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the INTOG corridor | |
| | St Abb`s Head to Fast Castle SPA | 4 km | |
| | Firth of Forth SPA/Ramsar (Includes compensation area Kennet Pans) | 6 km | |
| | Forth Islands SPA | 14 km | |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 20 km | |
| | Northumbria Coast SPA/Ramsar | 21 km | |
| | Lindisfarne SPA/Ramsar | 22 km | |
| | Farne Islands SPA | 27 km | |
| | Imperial Dock Lock, Leith SPA | 45 km | |
| | Loch Leven SPA | 60 km | |
| | Coquet Island SPA | 61 km | |
| | Fowlsheugh SPA | 96 km | |
| | Buchan Ness to Collieston Coast SPA | 135 km | |
| | Troup, Pennan and Lion's Heads SPA | 177 km | |
| | Flamborough and Filey Coast SPA | 198 km | |
| | East Caithness Cliffs SPA | 245 km | |
| | North Caithness Cliffs SPA | 282 km | |
| | Copinsay SPA | 287 km | |
| | Hoy SPA | 305 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Fair Isle SPA | 308 km | |
| | Calf of Eday SPA | 318 km | |
| | Rousay SPA | 323 km | |
| | West Westray SPA | 333 km | |
| | Sumburgh Head SPA | 336 km | |
| | Seas off Foula SPA | 347 km | |
| | Sule Skerry and Sule Stack SPA | 356 km | |
| | Noss SPA | 361 km | |
| | Foula SPA | 379 km | |
| | North Rona and Sula Sgeir SPA | 399 km | |
| | Fetlar SPA | 404 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 425 km | |
| | Alde-Ore Estuary SPA | 461 km | |
| North Connect_to_Cenos | Buchan Ness to Collieston Coast SPA | 188 km | |
| | Fair Isle SPA | 209 km | |
| | Troup, Pennan and Lion's Heads SPA | 210 km | |
| | Fowlsheugh SPA | 216 km | |
| | Seas off Foula SPA | 217 km | |
| | Sumburgh Head SPA | 218 km | |
| | Noss SPA | 231 km | |
| | Northumberland Marine SPA | 235 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 239 km | |
| | Copinsay SPA | 241 km | |
| | St Abb's Head to Fast Castle SPA | 253 km | |
| | Calf of Eday SPA | 254 km | |
| | North Caithness Cliffs SPA | 259 km | |
| | Forth Islands SPA | 259 km | |
| | East Caithness Cliffs SPA | 262 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Fetlar SPA | 264 km | |
| | Rousay SPA | 265 km | |
| | Foula SPA | 269 km | |
| | West Westray SPA | 272 km | |
| | Hoy SPA | 274 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 287 km | |
| | Flamborough and Filey Coast SPA | 334 km | |
| | Sule Skerry and Sule Stack SPA | 343 km | |
| | North Rona and Sula Sgeir SPA | 424 km | |
| | Alde-Ore Estuary SPA | 550 km | |
| Peterhead_to_Cenos | Buchan Ness to Collieston Coast SPA | Within the INTOG corridor | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 2 km | |
| | Loch of Strathbeg SPA/Ramsar | 13 km | |
| | Troup, Pennan and Lion`s Heads SPA | 30 km | |
| | Tips of Corsemaul and Tom Mor SPA | 64 km | |
| | Moray Firth SPA | 82 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 106 km | |
| | East Caithness Cliffs SPA | 121 km | |
| | North Caithness Cliffs SPA | 139 km | |
| | Forth Islands SPA | 142 km | |
| | Copinsay SPA | 157 km | |
| | Hoy SPA | 164 km | |
| | St Abb's Head to Fast Castle SPA | 167 km | |
| | Northumberland Marine SPA | 187 km | |
| | Calf of Eday SPA | 193 km | |
| | Rousay SPA | 194 km | |
| | West Westray SPA | 204 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Fair Isle SPA | 209 km | |
| | Sule Skerry and Sule Stack SPA | 230 km | |
| | Sumburgh Head SPA | 247 km | |
| | Seas off Foula SPA | 249 km | |
| | Foula SPA | 278 km | |
| | Noss SPA | 279 km | |
| | North Rona and Sula Sgeir SPA | 293 km | |
| | Fetlar SPA | 327 km | |
| | Flamborough and Filey Coast SPA | 334 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 347 km | |
| | Alde-Ore Estuary SPA | 550 km | |
| | Loch of Strathbeg SPA/Ramsar | Within the INTOG corridor | |
| | Buchan Ness to Collieston Coast SPA | 5 km | |
| | Ythan Estuary and Meikle Loch Ramsar | 13 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 13 km | |
| | Troup, Pennan and Lion`s Heads SPA | 14 km | |
| | Caithness and Sutherland Peatlands SPA | 43 km | |
| | Moray Firth SPA | 46 km | |
| | North Caithness Cliffs SPA | 50 km | |
| Scaraben_to_Peterhead_2 | Caithness Lochs SPA/Ramsar | 55 km | |
| | Fowlsheugh SPA | 58 km | |
| | Tips of Corsemaul and Tom Mor SPA | 63 km | |
| | East Caithness Cliffs SPA | 83 km | |
| | Pentland Firth Islands SPA | 84 km | |
| | Copinsay SPA | 91 km | |
| | Scapa Flow SPA | 94 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 109 km | |
| | Hoy SPA | 110 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Calf of Eday SPA | 125 km | |
| | Rousay SPA | 128 km | |
| | West Westray SPA | 138 km | |
| | Fair Isle SPA | 140 km | |
| | Forth Islands SPA | 146 km | |
| | Sumburgh Head SPA | 179 km | |
| | Seas off Foula SPA | 180 km | |
| | Sule Skerry and Sule Stack SPA | 182 km | |
| | Cape Wrath SPA | 186 km | |
| | Northumberland Marine SPA | 193 km | |
| | Foula SPA | 208 km | |
| | Noss SPA | 212 km | |
| | North Rona and Sula Sgeir SPA | 257 km | |
| | Fetlar SPA | 260 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 280 km | |

## Table 17j Assessment of the potential for changes in prey availability to have an AEoSI - Tenth table

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Sinclair_to_Scaraben | Loch of Strathbeg SPA/Ramsar | 62 km | These sites were screened in as the cable corridor is located within the foraging ranges for the designated seabird features. Although seabirds associated with these European Sites are likely to be present within the cable corridors, the loss of prey will account for only a small area of |
| | Troup, Pennan and Lion`s Heads SPA | 63 km | |
| | East Caithness Cliffs SPA | 73 km | |
| | Moray Firth SPA | 75 km | |
| | North Caithness Cliffs SPA | 77 km | |
| | Buchan Ness to Collieston Coast SPA | 78 km | |
| | Pentland Firth Islands SPA | 78 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Copinsay SPA | 81 km | the available marine habitats and therefore bird species are unlikely to be sensitive to it and will have high recoverability. It is therefore considered that impacts to the size and distributions of populations are negligible and that conservation objectives of these site will be hindered and thus no AEoSI. |
| | Caithness and Sutherland Peatlands SPA | 81 km | |
| | Caithness Lochs SPA | 82 km | |
| | Scapa Flow SPA | 84 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 87 km | |
| | North Orkney SPA | 91 km | |
| | Auskerry SPA | 93 km | |
| | Ythan Estuary and Meikle Loch Ramsar | 93 km | |
| | Calf of Eday SPA | 115 km | |
| | Rousay SPA | 118 km | |
| | West Westray SPA | 128 km | |
| | Fair Isle SPA | 134 km | |
| | Fowlsheugh SPA | 142 km | |
| | Sule Skerry and Sule Stack SPA | 172 km | |
| | Seas off Foula SPA | 174 km | |
| | Sumburgh Head SPA | 174 km | |
| | Cape Wrath SPA | 176 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 188 km | |
| | Noss SPA | 207 km | |
| | Fetlar SPA | 255 km | |
| | Foula SPA | 201 km | |
| | Noss SPA | 207 km | |
| | Forth Islands SPA | 226 km | |
| | North Rona and Sula Sgeir SPA | 247 km | |
| | Hermaness, Saxa Vord and Valla Field SPA | 275 km | |
| PDA1_to_Llandyfaelog | Bae Caerfyrddin/Carmarthen Bay SPA | Within the Celtic Sea corridor | |
| | Burry Inlet SPA/Ramsar | Within the Celtic Sea corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Skomer, Skokholm and the Seas off Pembrokeshire SPA | Within the Celtic Sea corridor | |
| | Grassholm SPA | 26 km | |
| | Northern Cardigan Bay/Gogledd Bae Ceredigion SPA | 65 km | |
| | Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island SPA | 99 km | |
| | Isles of Scilly SPA | 154 km | |
| | Ribble and Alt Estuaries SPA | 203 km | |
| | Irish Sea Front SPA | 207 km | |
| | Morecambe Bay and Duddon Estuary SPA | 245 km | |
| | Ailsa Craig SPA | 384 km | |
| | Rathlin Island SPA | 403 km | |
| PDA2_to_South_Wales_Connection_Node | Skomer, Skokholm and the Seas off Pembrokeshire SPA | 12 km | |
| | Bae Caerfyrddin/Carmarthen Bay SPA | 14 km | |
| | Burry Inlet SPA/Ramsar | 17 km | |
| | Grassholm SPA | 49 km | |
| | Northern Cardigan Bay/Gogledd Bae Ceredigion SPA | 92 km | |
| | Isles of Scilly SPA | 124 km | |
| | Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island SPA | 134 km | |
| | Ribble and Alt Estuaries SPA | 210 km | |
| | Irish Sea Front SPA | 240 km | |
| | Ailsa Craig SPA | 414 km | |
| | Rathlin Island SPA | 433 km | |
| PDA3_to_Pyworthy | Skomer, Skokholm and the Seas off Pembrokeshire SPA | 42 km | |
| | Falmouth Bay to St Austell Bay SPA | 51 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Grassholm SPA | 72 km | |
| | Isles of Scilly SPA | 122 km | |
| | Irish Sea Front SPA | 277 km | |
| | Ailsa Craig SPA | 458 km | |
| | Rathlin Island SPA | 466 km | |
| | Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island SPA | 1722 km | |

## Table 17k Assessment of the potential for changes in prey availability to have an AEoSI – Eleventh Table

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Traeth Lafan/Lavan Sands, Conway Bay SPA | 4 km | These sites were screened in as the cable corridor is located within the maximum foraging range (20 km) used to screen in waterfowl and wader features. Affected habitat may only constitute a very small amount of the overall foraging habitat available but waders and waterfowl are more localised in their foraging than most species of seabird and therefore impacts on prey abundance could be significant depending on details which will not be known until the project level. However, mitigation measures are available as listed above this table which could ensure there was no hindrance of |
| | Loch of Inch and Torrs Warren SPA/Ramsar | 9 km | |
| R4_3_to_Weston_Marsh | The Wash SPA/Ramsar | Within the HND corridor | |
| | North Norfolk Coast SPA/Ramsar | 19 km | |
| SW_E1a_to_Hawthorn Pit | Teesmouth and Cleveland Coast SPA/Ramsar (Including compensation area Seal Sands) | 7 km | |
| SW_NE7_to_Peterhead | Loch of Strathbeg SPA/Ramsar | 13 km | |
| | Ythan Estuary and Meikle Loch SPA/Ramsar | 12 km | |
| Kilmarnock_South_to_Ballantrae | Muirkirk and North Lowther Uplands SPA | 7 km | |
| SW_N4_to_Arnish_(Lewis) | Lewis Peatlands Ramsar/SPA | Within the HND Corridor | |
| R4_6_to_Penwortham | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HND corridor | |
| | Morecambe Bay and Duddon Estuary SPA/Ramsar | 7 km | |
| | Martin Mere SPA/Ramsar | 11 km | |
| R4_4_to_Bodelwyddan | The Dee Estuary SPA/Ramsar | 9 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Traeth Lafan/ Lavan Sands, Conway Bay SPA | 16 km | conservation objectives of these site and thus no AEoSI. |
| R4_5_to_Penwortham | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HND corridor | |
| | Morecambe Bay and Duddon Estuary SPA/Ramsar | 7 km | |
| | Martin Mere SPA/Ramsar | 11 km | |
| SW_N1_to_Spittal | North Caithness Cliffs SPA | Within the HND corridor | |
| | Caithness Lochs Ramsar/SPA | 1 km | |
| | Caithness and Sutherland Peatlands SPA/Ramsar | 4 km | |
| PA_1_to_Birkhill_Wood | Greater Wash SPA | Within the HND corridor | |
| | Hornsea Mere SPA | 2 km | |
| | Humber Estuary SPA/Ramsar (including Alkborough, Chowder Ness, Paull Holmes Strays, Skeffling and Welwick compensation areas) | 4 km | |
| R4_1_to_Birkhill Wood | Greater Wash SPA | Within the HND corridor | |
| | Hornsea Mere SPA | 2 km | |
| | Humber Estuary SPA/Ramsar (including Alkborough, Chowder Ness, and Paull Holmes Strays compensation areas) | 4 km | |
| R4_2_to_Birkhill Wood | Greater Wash SPA | Within the HND corridor | |
| | Hornsea Mere SPA | 2 km | |
| | Humber Estuary SPA/Ramsar (including Alkborough, Chowder Ness, and Paull Holmes Strays compensation areas) | 4 km | |
| SW_E1a_to_Lincolnshire_Connection_Node | Greater Wash SPA | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| | Rinns of Islay SPA/Ramsar | 9 km | |
| | Gibraltar Point SPA/Ramsar | 15 km | |
| | The Wash SPA/Ramsar | 17 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_W1_to_Ballantrae | Laggan, Islay SPA | 15 km | |
| | Gruinart Flats, Islay SPA/Ramsar | 17 km | |
| | Kintyre Goose Roosts SPA/Ramsar | 20 km | |
| Shetland_to_Blackhillock | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Moray and Nairn Coast SPA/Ramsar | Within the HNDFUE corridor | |
| | Moray Firth SPA | Within the HNDFUE corridor | |
| | Caithness and Sutherland Peatlands SPA/Ramsar | 8 km | |
| | Loch Spynie SPA/Ramsar | 9 km | |
| | Lochs of Spiggie and Brow SPA | 17 km | |
| | Caithness Lochs SPA/Ramsar | 18 km | |
| | North Caithness Cliffs SPA | 18 km | |
| SW_E1a_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the HNDFUE corridor | |
| | Firth of Forth SPA/Ramsar | 6 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Greater Wash SPA | Within the HNDFUE corridor | |
| | Humber Estuary SPA/Ramsar | 2 km | |
| | Gibraltar Point SPA/Ramsar | 15 km | |
| | The Wash SPA/Ramsar | 18 km | |
| SW_E1c_2_to_Weston Marsh | The Wash SPA/Ramsar | Within the HNDFUE corridor | |
| | Greater Wash SPA | Within the HNDFUE corridor | |
| | Gibraltar Point SPA/Ramsar | 5 km | |
| | Humber Estuary SPA/Ramsar | 5 km | |
| SW_E2a_2_to_Near Richborough | Thanet Coast and Sandwich Bay SPA/Ramsar | Within the HNDFUE corridor | |
| | Stodmarsh SPA/Ramsar | 5 km | |
| | The Swale SPA/Ramsar | 18 km | |
| SW_E2a_2_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | 6 km | |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA/Ramsar | 8 km | |
| SW_E3_to_Fiddes | Montrose Basin SPA/Ramsar | 11 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_N2_to_Near_Dounreay | Caithness and Sutherland Peatlands SPA/Ramsar | Within the HNDFUE corridor | |
| | Caithness Lochs SPA/Ramsar | 3 km | |
| | North Sutherland Coastal Islands SPA | 17 km | |
| SW_N3_to_Arnish | Lewis Peatlands SPA/Ramsar | Within the HNDFUE Corridor | |
| SW_NE2_to_Spittal | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 9 km | |
| SW_NE3_to_New_Deer_2 | Loch of Strathbeg SPA/Ramsar | 7 km | |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA/Ramsar | 19 km | |
| SW_NE4_to_New Deer | Moray Firth SPA | 7 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 18 km | |
| SW_NE6_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 9 km | |
| SW_NE7_to_Peterhead DCSS | Loch of Strathbeg SPA/Ramsar | 6 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 9 km | |
| SW_NE8_to_Peterhead 1 | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE corridor | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 5 km | |
| Aspen_to_Fetteresso | Montrose Basin SPA/Ramsar | 2 km | |
| | Loch of Skene SPA/Ramsar | 19 km | |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 20 km | |
| Cedar_to_Branxton | Firth of Forth SPA/Ramsar | 6 km | |
| Peterhead_to_Cenos | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 2 km | |
| | Loch of Strathbeg SPA/Ramsar | 13 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Sinclair_to_Scaraben | Loch of Strathbeg SPA/Ramsar | Within the INTOG corridor | |
| | Ythan Estuary and Meikle Loch Ramsar | 13 km | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 13 km | |
| PDA1_to_Llandyfaelog | Burry Inlet SPA/Ramsar | Within the Celtic Sea corridor | |
| PDA2_to_South_Wales_Connection_Node | Burry Inlet SPA/Ramsar | 17 km | |

# Collision risk with vessels

As part of the activities associated with the installation of subsea cables, a number of vessels wills be deployed during the installation, operation and maintenance, and decommissioning phases. These vessels will include all or a selection of the following:

- Survey vessels;
- Cable laying vessels;
- Guard vessels;
- Rock placement vessels;
- Jack up barges; and
- Dive support vessels for the works at the HDD breakout point.

The presence of vessels has the potential to increase the risk of vessel collision with marine mammals. Marine vessels which collide with marine megafauna, result in the most serious injuries if they are large ships, typically 80 m and longer as well as by vessels travelling faster than 14 knots (25 km/hr) (Laist *et al.*, 2001). There has been concern of high-speed ferry traffic travelling at similar speeds, which have been proven to be particularly lethal (Carrillo and Ritter, 2010). Injuries from such collisions can be divided into two broad categories: blunt trauma from impact, and lacerations from propellers.

Marine mammals, possess a thick subdermal layer of blubber or fat deposits which provides a level of protection to their vital organs, meaning they are reasonably resilient to minor strikes and collisions (Wilson *et al.*, 2007). Most are also considered to be fast swimming, agile species, with fast reflexes and good sensory capabilities (Hoelzel, 2002).

Avoidance behaviour exhibited by cetaceans is often associated with fast, unpredictable vessels such as speedboats and jet-skis (Bristow and Reeves, 2001; Gregory and Rowden, 2001), while neutral or positive reactions, particularly in dolphins have been observed with larger, slower moving vessels such as cargo ships (Ng and Leung, 2003; Sini *et al.*, 2005). Although there have been reports of vessel strikes with marine mammals, evidence of risk is limited (Deaville, 2015). Mortality and injury of cetaceans resulting from vessel strikes have been mostly reported in large baleen whales which are slow swimming (IAMMWG, 2023). There are few reports of vessel strikes with harbour porpoise and other small cetaceans, likely due to the avoidance behaviour of these species (particularly porpoises (Wisniewska *et al.*, 2018; Roberts *et al.*, 2019)).

The risk to pinnipeds is considered to be generally lower than that for cetaceans (Jones *et al.*, 2017). Although there have been reports of vessel strikes to pinnipeds, including several cases of injuries caused by propellers and thrusters (for dynamic positioning of vessels), evidence of risk is limited (Bexton *et al.*, 2012). For example, individual seals have been seen to easily avoid vessels involved in slow-moving dredging operations (Todd *et al.*, 2015). Furthermore, evidence suggests that a large proportion of supposed vessel strike injuries in

seals can be attributed to grey seal infanticide and cannibalism, which causes 'spiral/corkscrew' lacerations comparable to those produced by ship propellors (Brownlow *et al.*, 2016). The assessment is provided in **Table 18.**

## Mitigation

The following measures have the potential to avoid and/or reduce the risk of collision vessels and marine mammals and should be deployed by applicants as necessary during construction of their schemes, in accordance with standard best practice; a more detailed approach would need to be devised for individual planning applications and Development Consent Orders. Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar:

- Raise the priority of environmental considerations to an equal footing with other, more-traditional considerations at this strategic level, such as avoiding designated sites, and the need to cross third-party infrastructure, as far as possible;
- Project vessels to comply with the International Regulations for Preventing Collisions at Sea 1972;
- Development of a Vessel Management Plan at project-level to support compliance with the International Regulations for Preventing Collisions at Sea 1972, including specificying a maximum vessel speed for each vessel;
- Deploy marine mammal observers on vessels to help prevent collisions with marine animals;
- Consider the number of vessels required relative to the existing marine trafic;
- Reduce the speeds undertaken by vessels; and
- Reduce the number and frequency of vessels transiting between port and the installation/ maintenance site.

## Table 18: Assessment of the potential for collision risk with vessels to have an AEoSI

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | North Anglesey Marine/Gogledd Môn Forol SAC | Within the HND corridor | These sites were screened in as the study corridors are located within the same MMMU/SMU, and thus marine mammals have the potential to interact with the study corridors.<br>Although the number of vessels required for each cable route is not yet known, the numbers typically involved in such operations usually do not pose a significant increase in marine traffic and commonly operate at low speeds for the majority of the installation process.<br>It is assumed that industry standard embedded mitigation measures will be in place for each project, in which case, vessels will typically provide a negligible increase in collision risk to marine mammals.<br>Therefore, impacts to the size and distribution of populations are |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 8 km | |
| | The Maidens SAC | 20 km | |
| | Murlough SAC | 46 km | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | 62 km | |
| | Inner Hebrides and the Minches SAC | 70 km | |
| | South-East Islay Skerries SAC | 80 km | |
| | Bristol Channel Approaches SAC | 145 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 71 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 128 km | |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | |
| | Isle of May SAC | 48 km | |
| | Firth of Tay and Eden Estuary SAC | 55 km | |
| | Southern North Sea SAC | 139 km | |
| | Moray Firth SAC | 178 km | |
| R4_3_to_Weston_Marsh | Southern North Sea SAC | Within the HND corridor | |
| | The Wash and North Norfolk Coast SAC | Within the HND corridor | |
| | Humber Estuary SAC | 13 km | |
| | Moray Firth SAC | 544 km | |
| SW_E1a_to_Hawthorn Pit | Berwickshire and North Northumberland Coast SAC | 30 km | |
| | Southern North Sea SAC | 101 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Isle of May SAC | 110 km | considered to be negligible and the conservation objectives of these sites will not be hindered; thus no AEoSI has been concluded. |
| | Firth of Tay and Eden Estuary SAC | 111 km | |
| | Moray Firth SAC | 189 km | |
| SW_NE7_ To_Peterhead | Moray Firth SAC | 180 km | |
| | Firth of Tay and Eden Estuary SAC | 112 km | |
| | Isle of May SAC | 147 km | |
| | Berwickshire and North Northumberland Coast SAC | 174 km | |
| | Southern North Sea SAC | 240 km | |
| SW_NE4_to_New Deer | Dornoch Firth and Morrich More SAC | 76 km | |
| | Moray Firth SAC | 40 km | |
| | Firth of Tay and Eden Estuary SAC | 121 km | |
| | Isle of May SAC | 143 km | |
| | Southern North Sea SAC | 265 km | |
| SW_E1a_to_SW_e1b | Firth of Tay and Eden Estuary SAC | 111 km | |
| | Isle of May SAC | 113 km | |
| | Southern North Sea SAC | 137 km | |
| | Moray Firth SAC | 174 km | |
| SW_E1a_to_Fiddes | Berwickshire and North Northumberland Coast SAC | 30 km | |
| | Firth of Tay and Eden Estuary SAC | 46 km | |
| | Isle of May SAC | 68 km | |
| | Moray Firth SAC | 109 km | |
| | Southern North Sea SAC | 137 km | |
| Kilmarnock_South_to_Ballantrae | The Maidens SAC | 40 km | |
| | North Channel SAC | 43 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Inner Hebrides and the Minches SAC | 58 km | |
| | Skerries and Causeway SAC | 77 km | |
| | South-East Islay Skerries SAC | 77 km | |
| SW_N4_to_Arnish_(Lewis) | Inner Hebrides and the Minches SAC | Within the HND corridor | |
| | Ascrib, Isay and Dunvegan SAC | 63 km | |
| | North Rona SAC | 90 km | |
| | Monach Islands SAC | 98 km | |
| | Pen Llyn a`r Sarnau/ Lleyn Peninsula and the Sarnau SAC | 110 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 167 km | |
| | Sound of Barra | 130 km | |
| R4_6_to_Penwortham | North Anglesey Marine/Gogledd Môn Forol SAC | 37 km | |
| | North Channel SAC | 70 km | |
| | Pen Llyn a`r Sarnau/ Lleyn Peninsula and the Sarnau SAC | 110 km | |
| | West Wales Marine / Gorllewin Cymru Forol SAC | 118 km | |
| | Cardigan Bay/ Bae Ceredigion SAC | 167 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 235 km | |
| | Bristol Channel and Approaches SAC | 240 km | |
| R4_4_to_Bodelwyddan | North Anglesey Marine / Gogledd Môn Forol SAC | 11 km | |
| | Pen Llyn a`r Sarnau/ Lleyn Peninsula and the Sarnau SAC | 43 km | |
| | West Wales Marine / Gorllewin Cymru Forol SAC | 65 km | |
| | North Channel SAC | 89 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Cardigan Bay/ Bae Ceredigion SAC | 110 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 182 km | |
| | Bristol Channel and Approaches SAC | 185 km | |
| R4_5_to_Penwortham | North Anglesey Marine / Gogledd Môn Forol SAC | 52 km | |
| | North Channel SAC | 93 km | |
| | Pen Llyn a`r Sarnau/ Lleyn Peninsula and the Sarnau SAC | 95 km | |
| | West Wales Marine / Gorllewin Cymru Forol SAC | 118 km | |
| | Cardigan Bay/ Bae Ceredigion SAC | 167 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 230 km | |
| | Bristol Channel and Approaches SAC | 240 km | |
| SW_N1_to_Spittal | Moray Firth SAC | 40 km | |
| | Dornoch Firth and Morrich More SAC | 72 km | |
| | Faray and Holm of Faray SAC | 76 km | |
| | Sanday SAC | 86 km | |
| | North Rona SAC | 94 km | |
| | Inner Hebrides and the Minches SAC | 102 km | |
| PA_1_to_Birkhill_Wood | Southern North Sea SAC | Within the HND corridor | |
| | Humber Estuary SAC | 6 km | |
| | The Wash and North Norfolk Coast SAC | 88 km | |
| | Moray Firth SAC | 448 km | |
| R4_1_to_Birkhill Wood | Southern North Sea SAC | Within the HND corridor | |
| | Humber Estuary SAC | 6 km | |
| | The Wash and North Norfolk Coast SAC | 88 km | |
| | Moray Firth SAC | 444 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| R4_2_to_Birkhill Wood | Southern North Sea SAC | Within the HND corridor | |
| | Humber Estuary SAC | 6 km | |
| | The Wash and North Norfolk Coast SAC | 88 km | |
| | Moray Firth SAC | 448 km | |
| SW_E1a_to_Linconshire Connection Node | Southern North Sea SAC | Within the HND corridor | |
| | Humber Estuary SAC | 5 km | |
| | The Wash and North Norfolk Coast SAC | 15 km | |
| | Berwickshire and North Northumberland Coast SAC | 72 km | |
| | Firth of Tay and Eden Estuary SAC | 111 km | |
| | Isle of May SAC | 114 km | |
| | Moray Firth SAC | 189 km | |
| SW_W1_to_Ballantrae | Inner Hebrides and the Minches SAC | 14 km | |
| | South-East Islay Skerries SAC | 16 km | |
| | The Maidens SAC | 21 km | |
| | North Channel SAC | 37 km | |
| | Treshnish Isles SAC | 50 km | |
| | Eileanan agus Sgeiran Lios mor SAC | 81 km | |
| | Murlough SAC | 102 km | |
| Shetland_to_Blackhillock | Moray Firth SAC | 9 km | |
| | Mousa SAC | 9 km | |
| | Yell Sound Coast SAC | 9 km | |
| | Dornoch Firth and Morrich More SAC | 38 km | |
| | Faray and Holm of Faray SAC | 65 km | |
| | Sanday SAC | 208 km | |
| | Southern North Sea SAC | 285 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1a_to_Branxton | Berwickshire and North Northumberland Coast SAC | 3 km | |
| | Isle of May SAC | 19 km | |
| | Southern North Sea SAC | 123 km | |
| | Moray Firth SAC | 189 km | |
| SW_E1a_to_SW_E1c_2 | Isle of May SAC | 111 km | |
| | Southern North Sea SAC | 123 km | |
| | Moray Firth SAC | 189 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Southern North Sea SAC | Within the HNDFUE corridor | |
| | Humber Estuary SAC | 4 km | |
| | The Wash and North Norfolk Coast SAC | 15 km | |
| | Berwickshire and North Northumberland Coast SAC | 71 km | |
| | Isle of May SAC | 128 km | |
| | Firth of Tay and Eden Estuary SAC | 135 km | |
| | Moray Firth SAC | 198 km | |
| SW_E1c_1_to_SW_E1c_2 | Southern North Sea SAC | 123 km | |
| | Firth of Tay and Eden Estuary SAC | 136 km | |
| | Isle of May SAC | 138 km | |
| | Moray Firth SAC | 198 km | |
| SW_E1c_2_to_Weston Marsh | Southern North Sea SAC | Within the HNDFUE corridor | |
| | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor. | |
| | Humber Estuary SAC | 7 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Berwickshire and North Northumberland Coast SAC | 77 km | |
| | Isle of May SAC | 141 km | |
| | Firth of Tay and Eden Estuary SAC | 148 km | |
| | Moray Firth SAC | 222 km | |
| SW_E2a_1_to_SW_E2a_2 | Southern North Sea SAC | 173 km | |
| | Firth of Tay and Eden Estuary SAC | 193 km | |
| | Isle of May SAC | 200 km | |
| | Moray Firth SAC | 206 km | |
| SW_E2a_2_to_Near Richborough | Southern North Sea SAC | Within the HNDFUE corridor | |
| | The Wash and North Norfolk Coast SAC | 104 km | |
| | Humber Estuary SAC | 117 km | |
| | Berwickshire and North Northumberland Coast SAC | 143 km | |
| | Firth of Tay and Eden Estuary SAC | 193 km | |
| | Isle of May SAC | 200 km | |
| | Moray Firth SAC | 214 km | |
| SW_E2a_2_to_SW_E1c_1 | Firth of Tay and Eden Estuary SAC | 134 km | |
| | Isle of May SAC | 138 km | |
| | Southern North Sea SAC | 145 km | |
| | Moray Firth SAC | 214 km | |
| SW_E2b_to_SW_E2a_1 | Firth of Tay and Eden Estuary SAC | 163 km | |
| | Moray Firth SAC | 166 km | |
| | Isle of May SAC | 180 km | |
| | Southern North Sea SAC | 205 km | |
| SW_E2a_2_to_Peterhead 2 | Moray Firth SAC | 82 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Firth of Tay and Eden Estuary SAC | 120 km | |
| | Isle of May SAC | 149 km | |
| | Southern North Sea SAC | 212 km | |
| SW_E3_to_Fiddes | Firth of Tay and Eden Estuary SAC | 40 km | |
| | Isle of May SAC | 67 km | |
| | Berwickshire and North Northumberland Coast SAC | 92 km | |
| | Moray Firth SAC | 106 km | |
| | Southern North Sea SAC | 192 km | |
| SW_N2_to_Near_Dounreay | North Rona SAC | 29 km | |
| | Moray Firth SAC | 47 km | |
| | Inner Hebrides and the Minches SAC | 54 km | |
| | Dornoch Firth and Morrich More SAC | 75 km | |
| | Faray and Holm of Faray SAC | 84 km | |
| | Sanday SAC | 93 km | |
| SW_N3_to_Arnish | Inner Hebrides and the Minches SAC | Within the HNDFUE corridor | |
| | Ascrib, Isay and Dunvegan SAC | 63 km | |
| | North Rona SAC | 90 km | |
| | Monach Islands SAC | 98 km | |
| | Sound of Barra SAC | 130 km | |
| SW_NE1a_to_Shetland | Yell Sound Coast SAC | 9 km | |
| | Mousa SAC | 26 km | |
| SW_NE1b_to_Shetland | Yell Sound Coast SAC | 9 km | |
| | Mousa SAC | 27 km | |
| SW_NE1c_to_Shetland | Yell Sound Coast SAC | 9 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Mousa SAC | 27 km | |
| SW_NE2_to_Spittal | Sanday SAC | 44 km | |
| | Faray and Holm of Faray SAC | 52 km | |
| | Dornoch Firth and Morrich More SAC | 74 km | |
| | Southern North Sea SAC | 389 km | |
| SW_NE3_to_New_Deer_2 | Moray Firth SAC | 60 km | |
| | Faray and Holm of Faray SAC | 82 km | |
| | Dornoch Firth and Morrich More SAC | 96 km | |
| | Firth of Tay and Eden Estuary SAC | 155 km | |
| | Isle of May SAC | 146 km | |
| | Southern North Sea SAC | 265 km | |
| SW_NE4_to_New Deer | Moray Firth SAC | 41 km | |
| | Dornoch Firth and Morrich More SAC | 76 km | |
| | Southern North Sea SAC | 266 km | |
| _NE6_to_Peterhead 2 | Firth of Tay and Eden Estuary SAC | 120 km | |
| | Isle of May SAC | 149 km | |
| | Southern North Sea SAC | 264 km | |
| SW_NE7_to_Peterhead DCSS | Moray Firth SAC | 83 km | |
| | Firth of Tay and Eden Estuary SAC | 120 km | |
| | Isle of May SAC | 149 km | |
| | Southern North Sea SAC | 254 km | |
| SW_NE8_to_Peterhead 1 | Firth of Tay and Eden Estuary SAC | 118 km | |
| | Isle of May SAC | 146 km | |
| | Southern North Sea SAC | 262 km | |
| Aspen_to_Beech | Moray Firth SAC | 180 km | |
| | Firth of Tay and Eden Estuary SAC | 203 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Sanday SAC | 208 km | |
| | Dornoch Firth and Morrich More SAC | 218 km | |
| | Faray and Holm of Faray SAC | 220 km | |
| | Isle of May SAC | 220 km | |
| | Southern North Sea SAC | 260 km | |
| Aspen_to_Fetteresso | Firth of Tay and Eden Estuary SAC | 31 km | |
| | Isle of May SAC | 60 km | |
| | Berwickshire and North Northumberland Coast SAC | 72 km | |
| | Moray Firth SAC | 101 km | |
| | Dornoch Firth and Morrich More SAC | 132 km | |
| | Sanday SAC | 207 km | |
| | Faray and Holm of Faray SAC | 217 km | |
| | Southern North Sea SAC | 230 km | |
| Beech_to_Beech MPI | Sanday SAC | 272 km | |
| | Southern North Sea SAC | 272 km | |
| | Moray Firth SAC | 291 km | |
| | Faray and Holm of Faray SAC | 292 km | |
| | Firth of Tay and Eden Estuary SAC | 305 km | |
| | Berwickshire and North Northumberland Coast SAC | 315 km | |
| | Isle of May SAC | 316 km | |
| | Dornoch Firth and Morrich More SAC | 329 km | |
| Beech_to_Cedar | Southern North Sea SAC | 170 km | |
| | Berwickshire and North Northumberland Coast SAC | 206 km | |
| | Firth of Tay and Eden Estuary SAC | 212 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Cedar_to_Aspen | Isle of May SAC | 216 km | |
| | Moray Firth SAC | 236 km | |
| | Dornoch Firth and Morrich More SAC | 276 km | |
| | Sanday SAC | 281 km | |
| | Faray and Holm of Faray SAC | 296 km | |
| | Southern North Sea SAC | 166 km | |
| | Moray Firth SAC | 179 km | |
| | Berwickshire and North Northumberland Coast SAC | 207 km | |
| | Sanday SAC | 208 km | |
| | Dornoch Firth and Morrich More SAC | 216 km | |
| | Firth of Tay and Eden Estuary SAC | 216 km | |
| | Isle of May SAC | 218 km | |
| | Faray and Holm of Faray SAC | 219 km | |
| Cedar_to_Branxton | Berwickshire and North Northumberland Coast SAC | 2 km | |
| | Isle of May SAC | 21 km | |
| | Firth of Tay and Eden Estuary SAC | 46 km | |
| | Southern North Sea SAC | 119 km | |
| | Moray Firth SAC | 215 km | |
| | Dornoch Firth and Morrich More SAC | 291 km | |
| | Sanday SAC | 308 km | |
| | Faray and Holm of Faray SAC | 320 km | |
| North Connect_to_Cenos | Southern North Sea SAC | 187 km | |
| | Firth of Tay and Eden Estuary SAC | 216 km | |
| | Sanday SAC | 238 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Peterhead_to_Cenos | Berwickshire and North Northumberland Coast SAC | 250 km | |
| | Isle of May SAC | 260 km | |
| | Moray Firth SAC | 278 km | |
| | Dornoch Firth and Morrich More SAC | 311 km | |
| | Faray and Holm of Faray SAC | 320 km | |
| | Moray Firth SAC | 90 km | |
| | Firth of Tay and Eden Estuary SAC | 118 km | |
| | Dornoch Firth and Morrich More SAC | 128 km | |
| | Isle of May SAC | 145 km | |
| | Berwickshire and North Northumberland Coast SAC | 167 km | |
| | Southern North Sea SAC | 169 km | |
| | Sanday SAC | 187 km | |
| | Faray and Holm of Faray SAC | 194 km | |
| Scaraben_to_Peterhead_2 | Moray Firth SAC | 82 km | |
| | Firth of Tay and Eden Estuary SAC | 119 km | |
| | Isle of May SAC | 148 km | |
| | Southern North Sea SAC | 262 km | |
| Sinclair_to_Scaraben | Moray Firth SAC | 104 km | |
| | Firth of Tay and Eden Estuary SAC | 200 km | |
| | Isle of May SAC | 228 km | |
| | Southern North Sea SAC | 315 km | |
| PDA1_to_Llandyfaelog | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | West Wales Marine/Gorllewin Cymru Forol SAC | Within the Celtic Sea corridor | |
| | Lundy SAC | 32 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 40 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 67 km | |
| | North Anglesey Marine/Gogledd Môn Forol SAC | 150 km | |
| | North Channel SAC | 272 km | |
| PDA2_to_South_Wales_Connection_Node | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 9 km | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | 15 km | |
| | Lundy SAC | 20 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 69 km | |
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 97 km | |
| | Isles of Scilly Complex SAC | 120 km | |
| | North Anglesey Marine/Gogledd Môn Forol SAC | 184 km | |
| | North Channel SAC | 305 km | |
| PDA3_to_Pyworthy | Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC | Within the Celtic Sea corridor | |
| | Lundy SAC | 7 km | |
| | West Wales Marine/Gorllewin Cymru Forol SAC | 41 km | |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 46 km | |
| | Cardigan Bay/Bae Ceredigion SAC | 108 km | |
| | Isles of Scilly Complex SAC | 120 km | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Pen Llyn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC | 150 km | |
| | North Anglesey Marine/Gogledd Môn Forol SAC | 232 km | |
| | North Channel SAC | 342 km | |

# Airborne sound and visual disturbance to marine mammals and seabirds

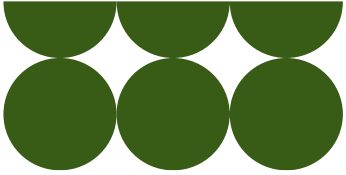
The operations of cable lay and supporting vessels could result in changes in visual stimuli (including artificial light) and an increase in airborne sound.

Cetaceans are not considered to be particularly sensitive to changes in visual stimuli as their primary sense relates to sound. However, pinnipeds spend time hauled out on land and at the sea-surface, making them more susceptible to airborne sound and visual stimuli. These can lead to avoidance behaviour disturbance effects which could cause individuals to stop resting, feeding, travelling and/or socialising, with possible long-term effects of repeated disturbance resulting in permanent displacement and/or a decline in fitness and productivity.

In general, shipping traffic more than 1,500 m away from a haul-out site is not thought to evoke any reaction. However, between 900 m and 1,500 m, grey seals could be expected to detect the presence of vessels; and at closer than 900 m, a flight reaction may occur (Scottish Executive, 2007). Studies of harbour seals have shown a flight response to boats occurs at a distance of around 500 m (Andersen et al., 2012). Therefore, the proportion of the designated population of seals likely to be exposed to disturbance at any one time is expected to be small relative to site-level population size. Any disturbance effects would also be limited to minor avoidance behaviour and as highly mobile animals that forage over extensive ranges, such movements are not considered likely to have any meaningful effect on the availability of prey or the energetic expenditure required for foraging. As any disturbance would be short-term, temporary, and very limited in extent, it is considered of negligible magnitude. However, at this plan-level stage, the risk of disturbance for each individual development cannot be assessed, and this will be considered further at project-level.

Disturbance can lead to a number of physiological and behavioural responses which can affect demographic characters of the bird population. Responses to disturbance can result in loss of energy, impaired breeding, unrest through increased vigilance, disruption to incubation, and increased nest failures due to predation and nest abandonment (Valente & Fisher, 2011).

The extent to which seabirds respond to disturbance is dependent upon a number of factors including: period of life cycle during which disturbance occurs; duration; type and intensity of the disturbance (e.g., onshore works are likely to be more disruptive to seabirds than the offshore works due to the generation of loud noises and use of machinery); presence of opportunistic predators; and the degree of habituation with the disturbance (Showler et al., 2010). Some seabirds are more resilient to disturbance and/or displacement than others with varying responses depending upon marine activity (MMO, 2018).



The construction and operation of an OWF can displace seaduck, a more sensitive species than most sea birds, up to 4 km (Furness and Wade, 2012; Bradbury, 2014; Natural England & JNCC, 2022) through visual and audible cues. However, disturbance from cable installation vessels will be less than those from offshore wind farms, thus 4.5 km represents a precautionary ZoI and represents a worst-case scenario for disturbance from the study corridor during the installation phase.

For example, common scoter and red-throated diver are both known to be displaced by boat traffic. Kaiser et al (2006) noted that large flocks of common scoter were observed being put to flight at a distance of 2 km from a 35 m vessel. Disturbance by boats also affects red-throated diver as the birds usually avoid them which can result in displacement and the forced use of suboptimal foraging habitats (Schwemmer et al 2011). Red-throated diver populations of the Outer Thames Estuary, Greater Wash and Liverpool Bay SPAs are all particularly sensitive to disturbance/displacement.

The effect of the vessel's presence would be disturbance of potential foraging or resting habitat on the sea, causing the birds to have to move elsewhere, which may result in birds having less time to forage, cause them to expend additional energy, or potentially disturb breeding and/or wintering. With the time of year that cable installation will take place not known, there is potential for disturbances to coincide with sensitive times of the year for bird species. In particular, the impacts of disturbance generated from anthropogenic activities within and around estuaries have been identified as a potential issue for waterfowl for several years. Goss-Custard (2002) suggests that the supporting ability of a designated site for migrating bird species could reduce as bird species may be unable to utilise the sites resources thereby resulting in local decreases in abundances.

However, given the temporary and transient nature of cable installation activities during construction, it is anticipated that significant effects could be avoided by seasonal restrictions on the construction programmes at individual Project level. Thus, despite installation methodologies being unknown at plan-level, adverse effects on site integrity could be avoided with commitments made at project-level. The appropriate assessment is provided in **Table 19**.

## Mitigation

The following measures have the potential to avoid and/or reduce the impact of airborne sound and visual disturbance on marine receptors. Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar:

- Considering lighting and the spectrum of lighting on vessels operating at night during key foraging and migratory periods;
- Adjusting vessel transit speeds when some species are visible, paricularly razorbill or guillemot. NatureScot have indicated this is particularly likely to be required for works occurring within the Outer Firth of Forth and St Andrews Bay Complex SPA if there is temporal overlap with the flightless moult period of razorbills and guillemots from mid-August to the end of October.

- Other seasonal restrictions, particularly on works within 2 km of red throated diver and 2.5 km of common scoter. JNCC when consulted over an earlier version of this report advised that works occurring within or around SPAs designated for common scoter and/or red-throated diver are carried out outside of their wintering period. This will vary slightly for each European site and the list below is not comprehensive (it does not include Carmarthen Bay SPA for example) but examples provided by JNCC are:
    - Greater Wash SPA – from September to April for both common scoter and red-throated diver. Designated Sites View (naturalengland.org.uk)
    - Liverpool Bay SPA – from November to March for both common scoter and red-throated diver
    - Outer Firth of Forth and St Andrews Bay Complex SPA – from September to March for red-throated diver, from July to April for common scoter.
    - Outer Thames Estuary SPA – from October to May for red-throated diver.
- Should this not be possible then a vessel disturbance assessment should be carried out to inform further analysis.
- Raise the priority of environmental considerations to an equal footing with other, more-traditional considerations at this strategic level, such as avoiding designated sites, and the need to cross third-party infrastructure, as far as possible;
- Micro-routing to avoid seal haul outs overlapping with the ZoI; and
- Lighting on-board the vessels can be kept to the minimum level required to ensure safe operations and directed towards working areas.

## Table 19: Airborne sound and visual disturbance to marine mammals and seabirds

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Anglesey Terns / Morwenoliaid Ynys Môn SPA | <1 km | These sites were screened in due to the associated study corridor running directly through, or within 4.5 km of its boundaries.<br>These site's qualifying features include ornithological receptors.<br>As there is potential for qualifying features within the boundaries of these sites to be negatively impacted by increased airborne sound and visual disturbances, further consideration of the project design for the planning application, and mitigation measures will be required. |
| | Traeth Lafan/ Lavan Sands, Conway Bay SPA | 4 km | |
| PA_2_ to_Berwick_Bank | Northumberland Marine SPA | Within the HND corridor | |
| | Northumbria Coast SPA/Ramsar | Within the HND corridor | |
| | Coquet Island SPA | 3 km | |
| R4_3_to_Weston_Marsh | Gibraltar Point SPA/Ramsar | 100m from the HND corridor | |
| | Greater Wash SPA | Within the HND corridor | |
| | The Wash SPA/Ramsar | Within the HND corridor | |
| SW_E1a_to_Hawthorn Pit | Northumbria Coast SPA/Ramsar | Within the HND corridor | |
| | Coquet Island SPA | 3 km | |
| SW_E1a_to_Fiddes | Fowlsheugh SPA | 2 km | |
| Kilmarnock_South_to_Ballantrae | Ailsa Craig SPA | 1 km | |
| SW_N4_to_Arnish_(Lewis) | Lewis Peatlands SPA/Ramsar | Within the HND Corridor | |
| R4_6_to_Penwortham | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HND corridor | |
| | Liverpool Bay SPA | Within the HND corridor | |
| R4_4_to_Bodelwyddan | Liverpool Bay SPA | Within the HND corridor | |
| R4_5_to_Penwortham | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HND corridor | |
| | Liverpool Bay SPA | Within the HND corridor | |
| SW_N1_to_Spittal | North Caithness Cliffs SPA | Within the HND corridor | |
| | Caithness Lochs SPA/Ramsar | 1 km | |
| | Caithness and Sutherland Peatlands SPA/Ramsar | 4 km | |
| PA_1_to_Birkhill_Wood | Greater Wash SPA | Within the HND corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Humber Estuary SPA/Ramsar | 4 km | |
| R4_1_to_Birkhill Wood | Greater Wash SPA | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| R4_2_to_Birkhill Wood | Greater Wash SPA | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| SW_E1a_to_Linconshire Connection Node | Greater Wash SPA | Within the HND corridor | |
| | Humber Estuary SPA/Ramsar | 4 km | |
| Shetland_to_Blackhillock | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| | Moray and Nairn Coast SPA/Ramsar | Within the HNDFUE corridor | |
| | Moray Firth SPA | Within the HNDFUE corridor | |
| | Noss SPA | Within the HNDFUE corridor | |
| SW_E1a_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the HNDFUE corridor | |
| | St Abb's Head to Fast Castle SPA | 4 km | |
| SW_E1c_1_to_Lincolnshire Connection Node | Greater Wash SPA | Within the HNDFUE corridor | |
| | Humber Estuary SPA/Ramsar | 2 km | |
| SW_E1c_2_to_Weston Marsh | Greater Wash SPA | Within the HNDFUE corridor | |
| | The Wash SPA/Ramsar | Within the HNDFUE corridor | |
| SW_E2a_2_to_Near Richborough | Thanet Coast and Sandwich Bay SPA/Ramsar | Within the HNDFUE corridor | |
| | Outer Thames Estuary SPA | 4 km | |
| SW_E3_to_Fiddes | Fowlsheugh SPA | 3 km | |
| SW_N2_to_Near_Dounreay | Caithness and Sutherland Peatlands SPA | Within the HNDFUE corridor | |
| | Caithness Lochs SPA/Ramsar | 3 km | |
| SW_N3_to_Arnish | Lewis Peatlands SPA/Ramsar | Within the HNDFUE Corridor | |
| SW_NE1a_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE1b_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| SW_NE1c_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE corridor | |
| **SW_NE2_to_Spittal** | Caithness Lochs SPA/Ramsar | Within HNDFUE corridor | |
| SW_NE6_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | |
| SW_NE7_to_Peterhead DCSS | Buchan Ness to Collieston Coast SPA | 3 km | |
| SW_NE8_to_Peterhead 1 | Buchan Ness to Collieston Coast SPA | Within the HNDFUE Corridor | |
| Aspen_to_Fetteresso | Montrose Basin SPA/Ramsar | 2 km | |
| | Fowlsheugh SPA | 3 km | |
| Cedar_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the INTOG corridor | |
| | St Abb`s Head to Fast Castle SPA | 4 km | |
| Peterhead_to_Cenos | Buchan Ness to Collieston Coast SPA | Within the INTOG corridor | |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 2 km | |
| Scaraben_to_Peterhead_2 | Loch of Strathbeg SPA/Ramsar | Within the INTOG corridor | |
| | Buchan Ness to Collieston Coast SPA | 5 km | |
| PDA1_to_Llandyfaelog | Bae Caerfyrddin/Carmarthen Bay SPA | Within the Celtic Sea corridor | |
| | Skomer, Skokholm and the Seas off Pembrokeshire SPA | Within the Celtic Sea corridor | |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | These sites were screened in due to the associated study corridor running directly through, or within 1.5 km of its boundaries.<br>These site's qualifying features include phocid receptors. |
| R4_3_to_Weston_Marsh | The Wash and North Norfolk Coast SAC | Within the HND corridor | |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor. | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Cedar_to_Branxton | Berwickshire and North Northumberland Coast SAC | 2 km | As there is potential for qualifying features within the boundaries of these sites to be negatively impacted by increased airborne sound and visual disturbances, further consideration of the project design for the planning application, and mitigation measures will be required. |
| PDA1_to_Llandyfaelog | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | |
| SW_NE7_ To_Peterhead | N/A | N/A | For these study corridors, no European sites have been screened into the assessment for the potential impact of temporary disturbance as a result of airborne sound and visual disturbance. |
| SW_NE4_to_New Deer | N/A | N/A | |
| SW_E1a_to_SW_e1b | N/A | N/A | |
| SW_W1_to_Ballantrae | N/A | N/A | |
| SW_E1a_to_SW_E1c_2 | N/A | N/A | |
| SW_E1c_1_to_SW_E1c_2 | N/A | N/A | |
| SW_E2a_1_to_SW_E2a_2 | N/A | N/A | |
| SW_E2a_2_to_SW_E1c_1 | N/A | N/A | |
| SW_E2b_to_SW_E2a_1 | N/A | N/A | |
| SW_E2a_2_to_Peterhead 2 | N/A | N/A | |
| | | | |
| SW_NE3_to_New_Deer_2 | N/A | N/A | |
| SW_NE4_to_New Deer | N/A | N/A | |
| Aspen_to_Beech | N/A | N/A | |
| Beech_to_Beech MPI | N/A | N/A | |
| Beech_to_Cedar | N/A | N/A | |
| Cedar_to_Aspen | N/A | N/A | |
| North Connect_to_Cenos | N/A | N/A | |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Sinclair_to_Scaraben | N/A | N/A | |
| PDA2_to_South_Wales_Connection_Node | N/A | N/A | |
| PDA3_to_Pyworthy | N/A | N/A | |

# Noise and visual disturbance of birds from landfall/onshore works

Noise and visual impacts stemming from cabling and associated terrestrial infrastructure such as substations and converter stations, can have multifaceted effects on birds. Development activities can induce both noise and visual disturbance for qualifying species within sites across various phases—construction, operational (including maintenance), and decommissioning. This could arise from staff movement, road traffic, construction plant, and lighting. For instance, qualifying birds may display temporary behavioural alterations, including interruptions or cessation of foraging and minor to major flight responses, due to construction disturbances. In the operational phase, noise from converter stations is unlikely to be disturbing except very close to the facility, but this would need project-specific noise modelling to confirm disturbing noise levels. Converter stations and substations may permanently impact the site usage patterns of foraging and roosting birds, although this concern is not applicable to cabling (other than via collision risk and associated displacement which is considered separately). The magnitude of disturbance from proposed developments on ecological receptors is significantly influenced by three key factors: individual species sensitivity, proximity to the disturbance source, and the timing/duration of the disturbance.

Noise and visual stimuli may elicit disturbance responses, potentially affecting the fitness and survival of qualifying birds. Noise is a complex disturbance parameter requiring consideration of multiple factors, including its non-linear scale, non-additive effect, and source-receptor distance. Professional judgment suggests that a high level of noise disturbance constitutes a sudden noise event of over 60 decibels (dB) or prolonged noise of over 72 dB. Bird responses to high noise levels include major flight or the cessation of feeding, both of which might affect the survival of birds, particularly if other stressors are also present (e.g., cold weather, food scarcity).

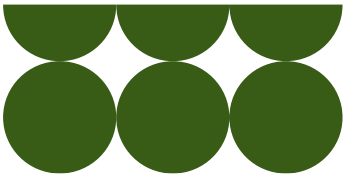
Birds can be sensitive to loud and sudden noises, and construction activities related to cabling, such as drilling, hammering, or machinery noise, may disturb birds in the immediate vicinity. This disturbance can lead to changes in their behaviour, including altered feeding patterns, disruption of nesting activities, or temporary displacement from the affected area. Cabling projects often involve infrastructure development that can alter the landscape and disrupt bird habitats. The noise and visual disruptions generated during these activities can contribute to habitat fragmentation, affecting the overall quality of the environment for birds. This can be particularly significant if the area is a critical nesting or breeding ground. Birds use vocalizations for communication, especially during breeding seasons. Loud noises and visual disruptions from cabling activities can interfere with bird communication and have implications for mate attraction, territorial defence, and overall social behaviour. If construction activities associated with cabling occur during the breeding season, the noise and visual disturbance may lead birds to abandon or avoid nesting sites. This can result in reduced reproductive success and population decline, particularly if suitable alternative nesting sites are not readily available.

Most research on noise has been undertaken on waterfowl and waders but is commonly applied to other species such as ground-nesting heathland birds (nightjar and woodlark), and raptors. Research generally indicates that above noise levels of 84 dB, waterfowl show a flight response, while at levels below 55 dB, there is no effect on their behaviour (Cutts & Allan, 1999). Therefore, these two thresholds are considered useful in defining two extremes. The same authors have advised that regular noise levels should remain below 70 dB at bird receptors, which they consider will habituate to noise levels below this level (Cutts et al. 2009). However, this threshold is not universally accepted. On some projects a lower disturbance threshold of 60dB LAmax (i.e. the average maximum noise level) has been agreed with Statutory Nature Conservation Bodies. This is on the basis that a change of 3dB is considered the minimum required to be perceptible as a change, but there is a difference between being perceptible and being disturbing. Using this logic a 5dB increase above the 55 dB threshold for no response (i.e. 60 dB) is therefore a reasonable proxy for the lowest noise level that may be disturbing. This needs to be agreed on a project-by-project basis. For example, if baseline noise levels already exceed 60 dB LAmax then a higher threshold for disturbance may be appropriate.

Noise is typically attenuated by 6dB with every doubling of distance from the source. Impact piling, typically the noisiest construction activity (approximately 110 dB at 0.67 m from the source), will thus reduce to below 60dB by approximately 200 m away from the source even in the absence of mitigation (which can typically reduce noise levels by 10dB and in some cases up to 20 dB). This implies that even the loudest construction noise should have fallen to below disturbing levels by 200 m away from the source even without mitigation. Noise levels from less noisy construction activities, such as HDD (approximately 85 dB at the source), are expected to dissipate over considerably shorter distances. Note that this is a rule of thumb and does not obviate the need for application-level noise modelling. Comparison with baseline noise levels may also be important in any assessment rather than purely using comparison with a specific metric.

Overall, visual stimuli are considered to have a higher disturbance potential than noise stimuli as, in most instances, visual stimuli will elicit a disturbance response at much greater distances than noise (University of Hull, 2013). For example, a flight response is triggered in most waterfowl or wader species when they are approached to within 150 m across a mudflat. Visual disturbance can be exacerbated by workers moving across open habitats undertaking sudden movements and using large machinery. Several species are particularly sensitive to visual disturbance including Eurasian curlew (*Numenius arquata*) (taking flight at 275 m), common redshank (*Tringa totanus*) (at 250 m), common shelduck (*Tadorna tadorna*) (at 199 m) and bar-tailed godwit (*Limosa lapponica*) (at 163 m). It is therefore common to use a 300 m precautionary distance threshold for visual disturbance.

Other than waterfowl and waders, there is evidence that human presence at up to 500m away, if accompanied by a dog, (Taylor, 2007) has been shown to result in some disturbance effects on stone curlew, which may include the bird flying from its nest, leaving eggs exposed. However, dogs, as predators, are known to be uniquely disturbing to birds (particularly ground nesters) and therefore a smaller distance may be appropriate for construction projects. In some instances where birds are in remote and tranquil areas disturbance can occur at greater distances. For example, according to (Goodship, 2022),



breeding golden eagles may be disturbed by anthropogenic activities taking place up to a distance of 1 km from the nest location, this being extended to 1.5 km for particularly intrusive works.

Considering assemblage composition is also important when identifying threshold levels for noise and visual disturbance. Different avian species are likely to be differently affected by developments involving the installation of cabling inland, depending on the types of habitats present, spatial requirements of ecological receptor species (e.g., flocking species such as pink-footed goose (*Anser brachyrhynchus*) requiring large areas of supporting habitat), species-specific foraging behaviour, and individual species sensitivity. Further best practice may involve scheduling construction activities to minimize disruption during the breeding bird season, establishing buffer zones around sensitive bird habitats to reduce direct impacts, and implementing technologies or practices to minimize noise and visual generation during construction.

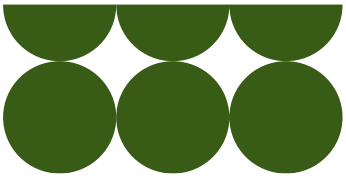
Only those sites which were screened in at the LSE stage, are designated for birds and where the study corridor overlaps with a terrestrial/coastal site are included in **Table 20**. While the potential for corridors to be located within 300 m of terrestrial/coastal sites were also considered, none were identified as being that close.

**Table 20** focusses on birds because there is a greater number of such sites and birds are generally the most noise-sensitive terrestrial ecological features, but noise and visual disturbance may also arise on bats or otters where these could be located within the corridor. For instance, the noise and visual disruptions linked to construction or decommissioning may prompt temporary behavioural changes in otters (*Lutra lutra*), causing disturbance in their holts and displacement from specific river stretches. **Table 24** has identified where this may arise. These are study corridors Ballantrae_to_Pentir, SW_N1_to_Spittal, Shetland_to_Blackhillock, SW_E1c_2_to_Weston Marsh, SW_N2_to_Near_Dounreay, SW_N3_to_Arnish and PDA1_to_Llandyfaelog for otter, and Corridor Ballantrae_to_Pentir for lesser horseshoe bat (*Rhinolophus hipposideros*).

## Mitigation

Whether the impacts are likely to arise on birds (see **Table 20** below), or bats or otters, the approach to addressing potential adverse effects on integrity will be similar, although assessment thresholds will differ. Mitigation is likely to take three forms. Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar:

- Physical avoidance – since the corridors are 5 km wide this provides ample opportunity for most corridors to locate the actual construction swath (including any new substation or converter station) sufficiently far away from the site to avoid disturbance (e.g. at least 300 m away for birds).
- Temporal avoidance – for some sites it may be possible to time the most disturbing works (e.g. HDD) to take place outside sensitive periods. This is likely to be more possible for birds and bats than for otter, as bats hibernate during the winter and many SPAs are designated for either non-breeding or breeding birds. For sites designated for non-breeding birds avoiding the most disturbing works between



October to March may avoid any adverse effect on integrity. For sites designated for breeding birds the season will vary and will need to be confirmed on a case-by-case basis but the core season is usually March to June. For sites designated for both breeding and non-breeding birds temporal avoidance may not be possible.

- Mitigation – this essentially involves reducing the noise and visual disturbance experienced by the bird or other wildlife to a level that is not significantly disturbing. This could involde the use of a different construction method. It may also involve ensuring visual screens and noise barriers are installed between the relevant works and the SPA, and/or fitting features to noise-generating plant and lighting fixtures to reduce the noise or light generated. It should be noted, however, that depending on noise/light levels during construction and proximity to European sites it may not be possible to reduce noise and light levels to a sufficient degree to avoid significant disturbance. For example, British Standard guidance generally indicates that conventional noise fencing may only reduce noise levels by up to 10 dB, while other types of mitigation (e.g. enclosing an HDD drive site in a housing) may achieve reductions of 20 dB. In these circumstances physical or temporal avoidance may be the only solution.

## Table 20. Assessment of the potential for noise and visual impacts to birds from landfall/onshore works to have an AEoSI

| Corridor number/name | European site screened in for this pathway | Distance between corridor and European site | Appropriate assessment |
|---|---|---|---|
| PA_2_ to_Berwick_Bank | Northumberland Marine SPA (Including compensation area Alnmouth 2) | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | Northumbria Coast SPA/Ramsar | Within HNDFUE corridor | The southern side of the corridor as it transitions to the terrestrial element traverses the SPA. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| R4_3_to_Weston_Marsh | Gibraltar Point Ramsar/SPA | 100m from HND corridor | A very small part of the onshore section of corridor lies within 100m of the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard |

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| | | | mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | The Wash Ramsar/SPA | Within HND corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | The Wash and North Norfolk Coast SAC | Within HND corridor | A very small part of the onshore section of corridor overlaps to a small extent with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_E1a to Hawthorn Pit | Northumbria Coast SPA/Ramsar | Within HNDFUE corridor | A very small part of the onshore section of corridor overlaps to a small extent with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard |

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| | | | mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| EE4c | Greater Wash SPA | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting), seasonal avoidance, or ensuring landfall is sufficiently landwards of the SPA. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_NE7_ To_Peterhead | Buchan Ness to Collieston Coast SPA | Within the HNDFUE Corridor | Approximately 3.3 km of the onshore section of corridor overlaps to with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_N4_to_Arnish_(Lewis) | Lewis Peatlands Ramsar/SPA | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting), seasonal avoidance. During operation, |

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| | | | any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| R4_6_to_Penwortham | Ribble and Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within HND corridor | The onshore 5 km wide corridor does overlap with SPA at its southern extent, but there is an extensive area in the north of the corridor that would enable the SPA to be avoided entirely. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | Liverpool Bay SPA | Within HND corridor | The marine part of the corridor overlaps with this SPA, but the landfall does not do so. It would therefore be possible to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. |
| R4_4_to_Bodelwyddan | Liverpool Bay SPA | Within HND corridor | The marine part of the corridor overlaps with this SPA, but the landfall does not do so as the SPA ends > 300m offshore. It would therefore be possible to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. |
| R4_5_to_Penwortham | Ribble and Alt Estuaries SPA/Ramsar | Within HND corridor | The onshore 5 km wide corridor does overlap with SPA at its southern extent, but there is an extensive area in the north of the corridor that would enable the SPA to be avoided entirely. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, |

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| | | | avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | Liverpool Bay SPA | Within HND corridor | The marine part of the corridor overlaps with this SPA, but the landfall does not do so. It would therefore be possible to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. |
| SW_N1_to_Spittal | North Caithness Cliffs SPA | Within HND/HNDFUE corridor | Approximately 1.4 km of the onshore section of corridor overlaps to with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| PA_1_to_Birkhill_Wood | Greater Wash SPA | Within HND/HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |

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| R4_1_to_Birkhill Wood | Greater Wash SPA | Within HND/HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| R4_2_to_Birkhill Wood | Greater Wash SPA | Within HND/HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_E1a_to_Linconshire Connection Node | Greater Wash SPA | Within HND/HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| Shetland_to_Blackhillock | East Mainland Coast, Shetland SPA | Within HND/HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An |

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| | | adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| Moray and Nairn Coast SPA/Ramsar | Within HND/HNDFUE corridor | A very small part of the onshore section of corridor overlaps to a small extent with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| Moray Firth SPA | Within HND/HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| Noss SPA | Within HND/HNDFUE corridor | Approximately 2.8 km of the onshore section of corridor overlaps with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new |

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| | | | substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_E1a_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within HND/HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_E1c_1_to_LincsCN | Greater Wash SPA | Within HND/HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting), seasonal avoidance, or ensuring landfall is sufficiently landwards of the SPA. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_E1c_2_to_Weston Marsh | The Wash SPA/Ramsar | Within HND/HNDFUE corridor | The southern onshore portion of the study corridor overlaps with a small extent of the SPA/Ramsar. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore |

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| | | | wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting), seasonal avoidance, or ensuring landfall is at a sufficient distance from the SPA. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | Greater Wash SPA | Within HND/HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_E2a_2_to_Near Richborough | Thanet Coast & Sandwich Bay SPA | Within HND/HNDFUE corridor | The entire corridor traverses the SPA as it transitions to terrestrial element. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_N2_to_Near_Dounreay | Caithness and Sutherland Peatlands Ramsar | Within the HNDFUE corridor | A very small part of the onshore section of corridor overlaps to a small extent with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new |

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| | | | substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | North Caithness Cliffs SPA | Within HNDFUE corridor | The western side of the onshore section of corridor overlaps to a large extent with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. Also, the SPA is in an area of cliff which is unlikely to be suitable for cable landfall. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_N3_to_Arnish | Lewis Peatlands Ramsar/SPA | Within the HND Corridor | Approximately 2.8 km of the onshore section of corridor overlaps to with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient |

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| | | | | distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_NE1a_to_Shetland | East Mainland Coast, Shetland SPA | Within the Corridor | HND | The entire corridor traverses the SPA as it transitions to terrestrial element. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_NE1b_to_Shetland | East Mainland Coast, Shetland SPA | Within the Corridor | HND | The entire corridor is within the SPA and the majority of the corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_NE1c_to_Shetland | East Mainland Coast, Shetland SPA | Within the Corridor | HND | The entire corridor is within the SPA and the majority of the corridor as it transitions to the terrestrial element traverses the SPA. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |

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| SW_NE2_to_Spittal | Caithness Lochs SPA/Ramsar | Within the HNDFUE Corridor | A very small part of the onshore section of corridor overlaps with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | Caithness and Sutherland Peatlands Ramsar | Within the HNDFUE corridor | A very small part of the onshore section of corridor overlaps with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_NE6_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | A part of the onshore section of corridor overlaps with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to |

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| | | | result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_NE8_to_Peterhead 1 | Buchan Ness to Collieston Coast SPA | Within the HNDFUE Corridor | A part of the onshore section of corridor overlaps with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | A part of the onshore section of corridor overlaps with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| SW_N4_to_Arnish_(Lewis) | Lewis Peatlands Ramsar/SPA | Within the HND Corridor | The entire corridor traverses the SPA as it transitions to terrestrial element. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need |

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| | | | to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| Cedar_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the corridor | INTOG | The entire corridor traverses the SPA as it transitions to terrestrial element. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| Peterhead_to_Cenos | Buchan Ness to Collieston Coast SPA | Within the corridor | INTOG | The entire corridor traverses the SPA as it transitions to terrestrial element. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| Scaraben_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | Within the corridor | INTOG | Approximately 1.4 km of the onshore section of corridor overlaps to with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient |

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| | | | distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| PDA1_to_Llandyfaelog | Bae Caerfyrddin/Carmarthen Bay SPA | Within the Celtic Sea corridor | The entire corridor traverses the SPA as it transitions to terrestrial element. Therefore, the terrestrial component of works poses the potential for noise and visual disturbance. An adverse effect on integrity could therefore arise without deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | Burry Inlet SPA/Ramsar | Within the Celtic Sea corridor | A very small part of the onshore section of corridor overlaps to with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting. |
| | Skomer, Skokholm and the Seas off Pembrokeshire SPA | Within the Celtic Sea corridor | A very small part of the onshore section of corridor overlaps to with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide, or the footprint of any converter station or new substation if needed. The corridor is therefore wide enough to ensure that any noise or visual disturbance can be avoided through spatial separation or through deployment of standard mitigation measures (e.g. noise damping, noise fencing, visual screening, avoidance of construction lighting) or seasonal avoidance. During operation, any converter station or new |

substation would need to be either located a sufficient distance not to result in disturbance and/or be suitably screened or have suitable lighting.

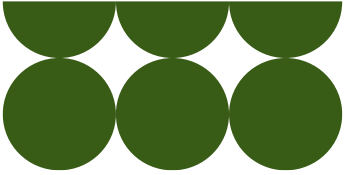
# Risk of bird strike from onshore overhead line

Appropriate Assessment for bird strike associated with overhead lines (OHL) becomes a key consideration when there is a potential inclusion of onshore cable within the corridor after the landfall point. While the design assumption for the plan has been for cabling up to the relevant substation (and thus study corridor end point) to be buried, the HRA has allowed for the possibility of new sections of overhead line as a precaution. The nature of HND is that it does not cover details of how the powerline will be continued after the substation, using what technology or in what direction, as this will be developed by the Transmission Operators. Since the terrestrial extent of cabling following substation connection is not covered by HND, HNDFUE, INTOG and Celtic Seas this HRA assumes as a precaution that some OHL could be involved beyond the substation, and this could be within the 5 km wide corridor. Since details of corridors after landfall are not known only the landfall has been assessed. Therefore, this assessment will need repeating for each planning application, but that is true for all impact pathways.

Bird strike incidents, where birds collide with OHL, pose potential ecological impacts to the qualifying bird species of European sites. Collision risk is greatest with the earth wire, as this is often thinner and therefore less visible than other wires. The most likely effect of collision is physical damage to the bird, but if two parts of the bird complete a circuit (e.g. a wing touching one cable and a foot touching another) electrocution can also occur. The risk of this depends on the spacing between the overhead lines. Certain species are also at greater collision risk than others depending upon their speed of flight, their size (wingtip to wingtip and beak to tail) and their manoeuvrability among other factors. For example, small highly manoeuvrable species such as golden plover are at very low risk of collision with overhead lines. Larger species such as swans and large geese are at greater risk, although even for these species the majority of birds on the majority of occasions will be able to avoid the OHL. As such different species have different rates of avoidance. For example, a 99% avoidance rate is considered appropriate for golden plover and lapwing for wind turbines and a similar, or possibly higher given the absence of moving parts, avoidance rate may apply to overhead powerlines.

In contrast to wind farms, there is no established numerical modelling method for OHL. It is possible to do a qualitative collision risk analysis taking account of species present and avoidance rates. However, this requires extensive bird survey data including vantage point surveys (typically at least 12 months of data) recorded bird flights through the space which would be occupied by the OHL. That is not possible for this plan and therefore the appropriate assessment of collision risk takes a precautionary approach, assuming that any corridor from landfall could include a section of OHL.

Where sites have been screened in solely on the basis of the presence of seabirds with an extended foraging range, consideration has been given to the use of inland habitats by the species. Therefore, sites which were screened in for lesser black-backed gull (*Larus Fuscus*)



have been screened in for bird strike from onshore overhead lines, as gulls are known to forage extensively inland. However, sites screened in for Manx shearwater (*Puffinus puffinus*), Fulmar (*Fulmarus glacialis*), Great skua (*Stercorarius skua*), Gannet (*Morus bassanus*), Storm petrel (*Hydrobates pelagicus*), Puffin (*Fratercula arctica*), Black-legged kittiwake (*Rissa tridactyla*), and Razorbill (*Alca torda*) have been concluded to pose low risk of collision with onshore OHL on the basis that they make little to no use of inland habitats and the birds feed exclusively in the marine environment.

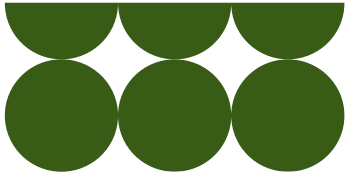
Where sites have been screened in on the basis of being designated for a "seabird assemblage", an assumption has been made that the assemblage will include gulls which use inland habitats as part of their foraging range. The assessment is provided in **Table 21**.

## Mitigation

Mitigating birdstrike incidents with OHL is imperative to minimise adverse effects on the designated avian populations. Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar.

If new OHL is going to be constructed, design modifications are essential for mitigation; incorporating avian-friendly features like bird flight diverters (which can include moving diverters and those which absorb light during the day and emit it at night for low visibility situations and nocturnal movements), perch deterrents, and insulator covers to reduce collision risks and discourage perching (Ferrer, 2020). Enhancing OHL visibility through markers and reflective materials is crucial to alert birds and diminish collision risks (NatureScot, 2016). Strategic undergrounding of cables, particularly in areas with high avian activity or ecologically sensitive habitats, eliminates collision risks altogether.

Vegetation management could be implemented to control plant growth near OHL, reducing perching opportunities for birds. Installing raptor perch deterrents and bird flight diverters along OHL further discourages avian interactions (Slater & Smith, 2010). Site-specific impact assessments are important to identify areas with increased avian activity and tailor mitigation measures accordingly.



## Table 21: Assessment of the potential for risk of bird strike from onshore overhead line to have an AEoSI

| Corridor number/name | European site screened in for this pathway | Distance between corridor and European site | Appropriate Assessment |
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| PDA1_to_Llandyfaelog | Bae Caerfyrddin/Carmarthen Bay SPA | Within the Celtic Sea corridor | Site was screened in for its seabird species, common scoter (*Melanitta nigra*). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Common scoter over winters at the SPA and are exclusively marine during the winter months. Therefore, they will feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise even if OHL is required due to this species feeding out at sea. |
| | Burry Inlet SPA/Ramsar | Within the Celtic Sea corridor | Site was screened in for its waterfowl and wader species. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of an SPA / Ramsar. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to corridor being within the SPA / Ramsar and the waders and waterfowl it's designated for, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Skomer, Skokholm and the Seas off Pembrokeshire SPA | Within the Celtic Sea corridor | Site was screened in for the part of the seabird assemblage (lesser black-backed gull) that has a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation** |

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| | | | **measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Grassholm SPA | 26 km | Site was screened in for its seabird species, northern gannet. The species of seabird for which the site is designated has a potential foraging range of 100 km which includes the corridor. However, the sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding out at sea. |
| | Northern Cardigan Bay/Gogledd Bae Ceredigion SPA | 65 km | Site was screened in for its seabird species, red-throated diver (*Gavia stellata*) which has a foraging range of 100 km. However, these birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the seabirds feeding out at sea. |
| | Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island SPA | 99 km | Site was screened in for Manx shearwater that have a foraging range of over 100 km. These birds feed out at sea or in coastal areas. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | Isles of Scilly SPA<br>Ribble and Alt Estuaries SPA | 154 km<br>203 km | These sites were screened in for lesser black-backed gull that has a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. There would be no adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| PDA2_to_South_Wales_Connection_Node | Skomer, Skokholm and the Seas off Pembrokeshire SPA | 12 km | Site was screened in for the seabird assemblage (lesser black-backed gull) that has a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore |

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| | | cable included in the corridor after the landfall point. There would be no adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Bae Caerfyrddin/Carmarthen Bay SPA | 14 km | Site was screened in for its seabird species, common scoter. The species of seabird for which the site is designated has a potential foraging range of 100 km which includes the corridor. However, common scoter over winters at the SPA and is exclusively marine during the winter months. Therefore, the species will feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding out at sea. |
| Burry Inlet SPA/Ramsar | 17 km | Site was screened in for its waterfowl and wader species. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, and there is generally a low likelihood of significant effects from electricity infrastructure at distances greater than 10 km. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried. However, no adverse effect on the integrity of the site will arise if OHL is required due to the distance between the corridor and the SPA/Ramsar. |
| Grassholm SPA | 49 km | Site was screened in for its seabird species, northern gannet. The species of seabird for which the site is designated have a potential foraging range of 100 km, which includes the corridor. However, the species feeds out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding out at sea. |

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| | Northern Cardigan Bay/Gogledd Bae Ceredigion SPA | 92 km | Site was screened in for its seabird species, red-throated diver which has a foraging range of 100 km. These sea birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the seabirds feeding out at sea. |
| | Isles of Scilly SPA<br>Ribble and Alt Estuaries SPA | 154 km<br>203 km | These sites were screened in for lesser black-backed gull that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| PDA3_to_Pyworthy | Skomer, Skokholm and the Seas off Pembrokeshire SPA | 42 km | Site was screened in for part of the seabird assemblage (lesser black-backed gull (*Larus fuscus*)) that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Falmouth Bay to St Austell Bay SPA | 51 km | Site was screened in for its seabird species, red-throated diver (*Gavia stellata*) which has a foraging range of 100 km. However, these sea birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the seabirds feeding out at sea. |
| | Grassholm SPA | 72 km | Site was screened in for its seabird species, northern gannet (*Morus bassanus*). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. However, the sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore |

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| | | | cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding out at sea. |
| | Isles of Scilly SPA | 154 km | Site was screened in for lesser black-backed gull that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Ballantrae_to_Pentir | Ailsa Craig SPA | 9 km | Site was screened in for part of the seabird assemblage (lesser black-backed gull) that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required, due to them coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Anglesey Terns/Morwenoliaid Ynys Môn SPA | <1 km | Site was screened in for the seabird assemblage (terns) that have a foraging range of 100 km. However, these are sea birds that feed out at sea or in coastal or tidal waters. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site is expected if OHL is required, due to this species feeding out at sea and in tidal waters. The corridor comes ashore in the mainland, and it is assumed that there will be no (new) OHL connectivity across the Menai Strait. |
| | Belfast Lough SPA/Ramsar | 36 km | Site was screened in for the seabird assemblage (terns) that have a foraging range of 100 km. The sea birds feed out at sea or in tidal waters. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no |

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| | | adverse effect on the integrity of the site is expected if OHL is required due to these birds feeding out at sea. |
| Carlingford Lough SPA/Ramsar | 68 km | Sites were screened in for the seabird assemblage that have a foraging range of 100 km. These species are common tern (*Sterna hirundo*) and sandwich tern (*Sterna sandvicensis*). The sea birds feed out at sea or in tidal waters and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, there will be However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island SPA | 22 km | Site was screened in for Manx shearwater that have a foraging range of over 100 km. The sea birds feed out at sea, and some will feed in coastal areas. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| Irish Sea Front SPA | 85 km | Site was screened in for Manx shearwater. This species has a potential foraging range of 100 km (or more) which includes the corridor. The sea bird feeds out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the seabirds not coming inland to feed. |
| Knapdale Lochs SPA | 84 km | Site was screened in for its seabird (black-throated diver (*Gavia arctica*)). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Larne Lough SPA/Ramsar | 30 km | Site was screened in for its seabird assemblage. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown |

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| | | if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the seabirds feeding out at sea. |
| Liverpool Bay SPA | 9 km | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea with the exception of gulls (little gull (*Hydrocoloeus minutus)*). It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for little gull if OHL is required due to the species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Loch Ken and River Dee Marshes SPA | 51 km | Site was screened in for its tern species which have a potential foraging range of 100 km which includes the corridor. Terns feed out at sea and in tidal waters rather than inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site is unlikely if OHL is required due to the seabirds feeding out at sea. |
| Loch of Inch and Torrs Warren SPA/Ramsar | 9 km | Site was screened in for its waterfowl species (Greenland white-fronted goose (*Anser albifrons flavirostris*)). Natural England guidance on Impact Risk Zones indicate that most species of waterfowl will generally stay within 2 km of the SPA; however, according to the same guidance, Greenland white-fronted goose has a foraging range of up to 10 km. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site on species Greenland white-fronted goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Mersey Narrows and North Wirral Foreshore SPA/Ramsar | 63 km | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea, with the exception of the gull species (little gull). It is currently unknown if |

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| | | there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for little gull if OHL is required, due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Morecambe Bay Ramsar | 99 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of Mediterranean gull (*Larus melanocephalus*), lesser black-backed gull, and little gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required, due to these species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Morecambe Bay and Duddon Estuary SPA | 82 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of Mediterranean gull, lesser black-backed gull, and little gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required, due to these species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Northern Cardigan Bay/Gogledd Bae Ceredigion SPA | 17 km | Site was screened in for its seabird species, red-throated diver. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor |

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| | | after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required, due to this species feeding out at sea. |
| Outer Ards SPA | 26 km | Site was screened in for the seabird assemblage (Arctic tern) that have a foraging range of 100 km. The sea birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required, due to this species feeding out at sea. |
| Rathlin Island SPA | 60 km | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea, with the exception of common gull, herring gull and lesser black-backed gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required, due to the species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Ribble and Alt Estuaries SPA/Ramsar | Ribble and Alt Estuaries SPA/Ramsar | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea, with the exception of black-headed gull and lesser black-backed gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required, due to the species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Solway Firth SPA | 34 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These species are: herring gull, common gull, and black-headed gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if** |

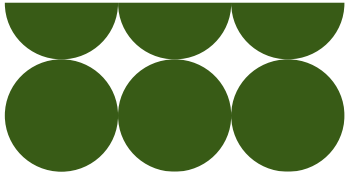
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| | | **OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Sound of Gigha SPA | 48 km | Site was screened in for its seabirds. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor, these are great northern diver (*Mergus serrator*) and Slavonian grebe (*Gavia immer*). The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Strangford Lough SPA | 35 km | Site was screened in for the seabird assemblage (terns) that have a foraging range of 100 km. The sea birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| The Dee Estuary SPA/Ramsar | 38 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA. The sea bird assemblage feed out at sea and not inland, with the exception of gulls. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is unlikely if OHL is required due to the proximity of the site to the corridor and the presence of gulls in the waterbird assemblage, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Traeth Lafan/Lavan Sands, Conway Bay SPA | 3.5 km | Site was screened in for its waterfowl and wader species. Waders can feed around the intertidal zone as well as estuaries and inland |

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| | | wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site would arise if OHL is required due to the proximity of the site from the corridor. |
| Upper Solway Flats & Marshes Ramsar | 52 km | Site was screened in for the seabird assemblage (lesser black-backed gull) that have a foraging range of over 100 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gulls if OHL is required, due to this species foraging inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Ynys Seiriol/Puffin Island SPA | 14 km | Site was screened in for the seabird assemblage (great cormorant (*Phalacrocorax carbo*)) that have a foraging range of 35 km. Cormorant will feed in the water. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due this species feeding within the water and there being no need for the species to traverse the landfall to forage due to the orientation of the landfall with the SPA. |
| Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA | 146 km | Site was screened in for lesser black-backed gull that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| PA_2_ to_Berwick_Bank | Northumberland Marine SPA (Including compensation area Alnmouth 2) | Within the HNDFUE corridor | Site was screened in for its sea bird assemblage: Atlantic puffin, little tern, roseate tern, common tern, Arctic tern, sandwich tern, and common guillemot (*Uria aalge*). The sea birds for which the site is designated feed out at sea or in tidal waters, and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these seabirds not foraging inland. |
| | Northumbria Coast SPA / Ramsar | Within the HNDFUE corridor | Site was screened in for its seabirds and species of wader: purple sandpiper (*Calidris maritima*) (SPA/Ramsar designation) and turnstone (*Arenaria interpres*) (Ramsar designation), which generally stay within 2 km of the SPA according to Natural England guidance. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | Adjacent to the HNDFUE corridor | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull, common gull, little gull and black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Farne Islands SPA | 5 km | Site was screened in for tern species and guillemot and for a seabird assemblage which have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the |

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| | | corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Coquet Island SPA | 3 km | Site was screened in for its tern species and seabird assemblage which have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Farne Islands SPA | 5 km | Site was screened in for tern species and guillemot and for a seabird assemblage which have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Teesmouth and Cleveland Coast SPA (Including compensation area Seal Sands) | 42 km | Site screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea and not inland. Therefore, an adverse effect on integrity is not expected. |
| Forth Islands SPA | 46 km | Site was screened in for the seabird assemblage (lesser black-backed gull) that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse |

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| | | effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to lesser black-backed gulls coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Fowlsheugh SPA | 62 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| St Abb`s Head to Fast Castle SPA | 25 km | Site was screened in for its species of seabird which have a potential foraging range of 100 km which includes the corridor. These species include herring gull; gulls will feed out at sea and inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull may feed inland and the landfall is just within 100 km of the SPA, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Solway Firth SPA | 94 km | Site was screened in for its species of seabird which have a potential foraging range of 100 km which includes the corridor. These species are herring gull, common gull and black-headed gull; gulls will feed out at sea and inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse on the integrity of the site if OHL is required as this SPA is on the opposite coast of the UK. |
| Upper Solway Flats and Marshes Ramsar | 94 km | Site was screened in for lesser black-backed gull that has a foraging range of up to 100 km. It is currently unknown if there will be a section of onshore cable included in the corridor after the |



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| | | | landfall point. No adverse on the integrity of the site if OHL is required as this Ramsar site is on the opposite coast of the UK. |
| R4_3_to_Weston_Marsh | Flamborough & Filey Coast SPA | 91 km | Site was screened in for specified seabird species (razorbill, northern gannet, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Gibraltar Point Ramsar/SPA | 100m from the HNDcorridor | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA. **Potential adverse effect on the integrity of the site is for the waterfowl and waders species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Great Yarmouth North Denes SPA | 70 km | Site was screened in for its species of seabird for which the site is designated, which have a potential foraging range of 100 km which includes the corridor. These species are: little tern (*Sterna albifrons*). This species feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| | Greater Wash SPA | Within the HNDcorridor | Site was screened in for its seabird species (terns, red throated diver, common scoter and little gull). The species of seabird for which the site is designated have a potential foraging range of over |

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| | | 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the gulls, which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for little gull if OHL is required due to coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Humber Estuary SPA/Ramsar (Including compensation areas Alkborough, Chowder Ness, Paul Holme Strays, Skeffling, and Welwick) | 6 km | Site was screened in for its seabirds (little tern), waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar; however, golden plover (*Pluvialis apricaria*) which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. Pink footed goose are also considered part of the assemblage for this SPA and will travel similar distances. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. **No adverse effect on integrity if the cable is buried underground. Potential adverse effect on the integrity of the site for golden plover if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| North Norfolk Coast Ramsar / SPA | 19 km | Site was screened in for its seabird assemblage. The species of seabird for which the site is designated (terns) have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Ouse Washes SPA | 38 km | Due to the distance from the site, there are no likely impact pathways for waterfowl or waders for which the site is designated, |

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| | | as these species have a potential foraging range of 20 km which excludes the corridor.<br>Great cormorant has a maximum foraging range of 35 km. As the site lies outside of this range, it is unlikely there will be impact pathways for this species. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Outer Thames Estuary SPA | 83 km | Site was screened in for the seabird assemblage (terns and red throated diver) that have a foraging range of 100 km. The sea birds feed out at sea or in tidal waters. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the seabirds feeding out at sea. |
| The Wash Ramsar/SPA | Within the HND/HNDFUE corridor | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose and golden plover which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for all waterfowl and waders including pink-foot goose and golden plover if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Upper Nene Valley Gravel Pits SPA | 52 km | Site was screened in for lesser black-backed gull. This species has a potential foraging range of 100 km (or more) which includes the corridor. This species feeds out at sea and inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the |

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| | | | cable is buried underground. **Potential adverse effect on the integrity of the site for lesser black-backed gull if OHL is required, due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Alde-Ore Estuary SPA | 128 km | Site was screened in for lesser black-backed gull that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_E1a_to_Hawthorn Pit | Northumbria Coast Ramsar/ SPA and Marine SPA | Within the HNDFUE corridor | Site was screened in for its seabirds and waterfowl species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, the waterfowl species generally stay within 2 km of the SPA, so therefore have the potential to be impacted due to the proximity of the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the waterfowl species if OHL is required due to the site being within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Coquet Island SPA | 3 km | Site was screened in for its tern species and seabird assemblage which the site is designated for have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard** |

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| | | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Teesmouth and Cleveland Coast SPA / Ramsar (including Compensation Area Seal Sands) | 7 km | Site was screened in for its seabirds and waterfowl species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. However, the sea bird assemblage feed out at sea and not inland, while the waterfowl species generally stay within 2 km of the SPA. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds feeding out at sea and the site being beyond the 2 km impact risk zone for relevant waterfowl. |
| | Farne Islands SPA | 45 km | Site was screened in for tern species and guillemot and for a seabird assemblage which have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Lindisfarne Ramsar/ SPA | 53 km | Site was screened in for its seabird species. The species of seabird for which the site is designated (little tern and roseate tern (*Sterna dougallii*)) have a potential foraging range of 100 km or more which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds feeding out at sea. |
| | Outer Firth of Forth and St Andrews Bay Complex SPA | 59 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull, common gull, little gull and black-headed gull which will forage |

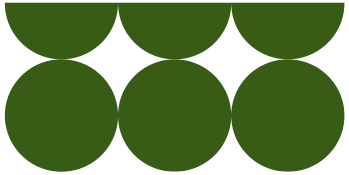
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| | | | inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Fowlsheugh SPA | 80 km | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, adverse effects on the integrity of the site will not arise if OHL is required due to the birds feeding out at sea. |
| | Flamborough & Filey Coast SPA | 85 km | Site was screened in for specified seabird species (razorbill, northern gannet, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 87 km | Sites were screened in for the seabird assemblage that have a foraging range of 100 km. These species are: little tern, common tern and sandwich tern. The sea birds feed out at sea and in tidal waters, and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds feeding out at sea. |
| | Buchan Ness to Collieston Coast SPA | 95 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull |

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| | | | which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Forth Islands SPA | 108 km | Site was screened in for the seabird assemblage (lesser black-backed gull (*Larus fuscus*)) that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to lesser black-backed gulls coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Forth Islands SPA | 108 km | Site was screened in for lesser black-backed gull that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_NE4_to_New Deer | Auskerry SPA | 90 km | Sites were screened in for seabirds that have a foraging range of 100 km. These species are: arctic tern, and storm petrel. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds feeding out at sea. |
| | Buchan Ness to Collieston Coast SPA | 24 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull |

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| | | | which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Caithness and Sutherland Peatlands SPA | 43 km | Site was screened in for its seabirds (black-throated diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Copinsay SPA | 73 km | Site was screened in for the seabird assemblage including greater black-headed gull that have a foraging range of 100 km or more. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to greater black-headed gulls coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Cromarty Firth SPA | 82 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | East Caithness Cliffs SPA | 37 km | Site was screened in for the seabird assemblage including (herring gull and great black-headed gull (*Larus marinus*)) that have a foraging range of 100 km or more. Gulls will generally forage in |

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| | | coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to lesser black-backed gulls coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Fowlsheugh SPA | 59 km | Site was screened in for the seabird assemblage including herring gull that have a foraging range of 100 km or more. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to herring gulls coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Hoy SPA | 74 km | Site was screened in for the seabird assemblage including great black-headed gull (*Larus marinus*) that have a foraging range of 100 km or more. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to lesser black-backed gulls coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Inner Moray Firth Ramsar/SPA | 78 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |

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| | Lairg and Strath Brora Lochs SPA | 93 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Loch of Strathbeg SPA | 23 km | Site was screened in for its seabirds (sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Moray Firth SPA | 7 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, barnacle goose which the site is designated for have foraging range of 15-25 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on some SPA waterfowl/waders if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Muir of Dinnet Ramsar/SPA | 54 km | Site was screened in for its seabirds (great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |



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| | North Caithness Cliffs SPA | 50 km | Site was screened in for specified seabird species (razorbill, puffin, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | North Orkney SPA | 80 km | Site was screened in for its seabirds (great northern diver, red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Orkney Mainland Moors SPA | 88 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Pentland Firth Islands SPA | 57 km | Site was screened in for its seabirds (arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Scapa Flow SPA | 68 km | Site was screened in for its seabirds (great northern diver and black-throated diver). The species of seabird for which the site is |

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| | | | designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Tips of Corsemaul and Tom Mor SPA | 30 km | Site was screened in for its seabird species, common gull. which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Troup, Pennan and Lion`s Heads SPA | 8 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 19 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, barnacle goose which the site is designated for have foraging range of 15-25 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No |

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| | | | adverse effect on integrity if the cable is buried underground. **Potential adverse effect on some SPA waterfowl/waders if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_NE7_ To_Peterhead | Buchan Ness to Collieston Coast SPA | Within the HND corridor | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Fowlsheugh SPA | 62 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Loch of Strathbeg Ramsar/SPA | *13 km* | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar; however, pink-footed goose and barnacle goose (*Branta leudopsis)* which the site is designated for have foraging range of 15-20 km and 15-25 km respectively from the SPA / Ramsar. The sea bird assemblage feed |

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| | | out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and barnacle goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Moray Firth SPA | 40 km | Site was screened in for its seabirds (great northern diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Muir of Dinnet SPA | 73 km | Site was screened in for its seabirds (great northern diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Tips of Corsemaul and Tom Mor SPA | 69 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the common gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Troup, Pennan and Lion`s Heads SPA | 12 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of |

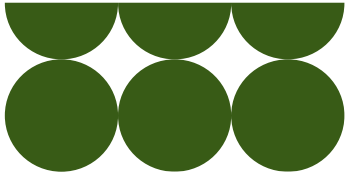
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| | | over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Ythan Estuary and Meikle Loch Ramsar/SPA | 12 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar; however, pink-footed goose which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 5 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar; however, pink-footed goose and lapwing (*Vanellus vanellus*) which the site is designated for have a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable |

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| | | | included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and lapwing if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_E1a_to_SW_e1b | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| SW_E1a_to_Fiddes | Buchan Ness to Collieston Coast SPA | 47 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Firth of Forth Ramsar/SPA | 60 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Forth Islands SPA | 64 km | Site was screened in for lesser black-backed gull. This species has a potential foraging range of 100 km (or more) which includes the corridor. This species feeds out at sea and inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for lesser black-backed gull if OHL is required, due to this species coming inland to feed, although standard** |

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| | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Fowlsheugh SPA | 2 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Loch Leven SPA | 92 km | Site was screened in for the seabird assemblage (great cormorant) that have a foraging range of 35 km. Cormorant will feed in the water. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due this species feeding within the water and the fact that the orientation of the landfall to the SPA means SPA birds will not need to traverse the landfall to forage in the sea. |
| Loch of Strathbeg SPA | 78 km | Site was screened in for its seabirds (sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Montrose Basin SPA/Ramsar | 13 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose and greylag goose (*Anser anser*) which the site is |

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| | | designated for have a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and greylag goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Moray Firth SPA | 86 km | Site was screened in for its seabirds (great northern diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Muir of Dinnet SPA | 38 km | Site was screened in for its seabirds (great northern diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Outer Firth of Forth and St Andrews Bay Complex SPA | 29 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull, common gull, little gull and black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

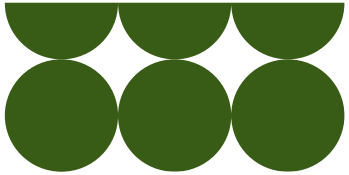
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| St Abb`s Head to Fast Castle SPA | 95 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Loch of Strathbeg SPA | 23 km | Site was screened in for its seabirds (sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Tips of Corsemaul and Tom Mor SPA | 67 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the common gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Troup, Pennan and Lion`s Heads SPA | 81 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried |



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| | | | underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary and Meikle Loch Ramsar | 44 km | Site was screened in for its seabirds (sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 26 km | Site was screened in for its seabirds (little tern, common tern, sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Kilmarnock_South_to_Ballantrae | Ailsa Craig SPA | 1 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull and lesser black-backed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Arran Moors SPA | 15 km | Site was screened in for hen harrier (*Circus cyaneus*) which, according to guidance (Scottish Natural Heritage, 2016) has a maximum foraging range of 10 km which excludes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse |

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| | | effect on the integrity of the site will arise if OHL is required due to the SPA being beyond the impact risk zone of the study corridor. |
| Belfast Lough SPA/Ramsar | 63 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Firth of Forth Spa/Ramsar (Includes compensation area Kennet Pans) | 65 km | Site was screened in for its seabirds (common tern, red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Forth Islands | 79 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the lesser black-backed which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Glen App and Galloway Moors SPA | 2 km | Site was screened in for hen harrier which has a maximum foraging range of 10 km which includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the hen harrier species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| Imperial Dock Lock, Leith SPA | 90 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Knapdale Lochs (Scotland) | 65 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Larne Lough SPA/Ramsar | 54 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the Mediterranean gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Loch Ken and River Dee Marshes SPA | 52 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Loch Leven SPA | 92 km | Site was screened in for its seabirds (cormorant) which has a maximum foraging range of 35 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the |



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| | | corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Muirkirk and North Lowther Uplands SPA | 7 km | Site was screened in for a number of birds of prey (Scottish Natural Heritage, 2016) and golden plover all of which have a foraging range which includes the corridor with the exception of merlin (*Falco columbarius*) and short-eared owl (*Asio flammeus*), It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. Site was screened in for hen harrier which has a maximum foraging range of 10 km which includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the bird of prey species and golden plover if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Muir of Dinnet SPA | 81 km | Site was screened in for its seabirds (great northern diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Outer Ards SPA | 58 km | Site was screened in for its seabirds (arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Outer Firth of Forth and St Andrews Bay Complex SPA | 81 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull, |

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| | | common gull, little gull and black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Solway Firth SPA | 45 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull, common gull and black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Sound of Gigha SPA | 48 km | Site was screened in for its seabirds (great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Strangford Lough Ramsar | 71 km | Site was screened in for its seabirds (sandwich tern and common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Upper Solway Flats & Marshes Ramsar | 79 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of |

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| | | | over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the lesser black-backed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Morecambe Bay and Duddon Estuary SPA | 193 km | Site was screened in for lesser black-backed gull that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_N4_to_Arnish_(Lewis) | Caithness and Sutherland Peatlands SPA | 90 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Cape Wrath SPA | 84 km | Site was screened in for specified seabird species (fulmar, black-legged kittiwake, puffin, razorbill and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard** |

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| | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Handa SPA | 66 km | Site was screened in for specified seabird species (razorbill, northern gannet, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Inverpolly, Loch Urigill and Nearby Lochs SPA (Scotland) | 64 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Lewis Peatlands Ramsar/SPA | Within the HND Corridor | Site was screened in for its bird species, all of which will forage within the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Loch Maree Ramsar/SPA | 66 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |

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| Monach Isles SPA | 99 km | Site was screened in for its seabirds (black guillemot). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Mointeach Scadabhaigh SPA | 77 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| North Rona and Sula Sgeir SPA | 78 km | Site was screened in for its seabirds (fulmar, gannet, puffin, razorbill). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Priest Island (Summer Isles) SPA | 54 km | Site was screened in for its seabirds (storm petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Seas off St Kilda SPA | 57 km | Site was screened in for specified seabird species (fulmar, northern gannet, storm petrel and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is |

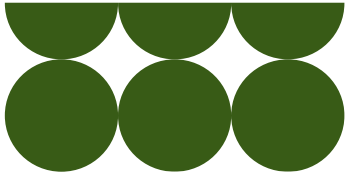
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| | | | buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Shiant Isles SPA | 27 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the lesser black-backed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | West Coast of the Outer Hebrides SPA | 37 km | Site was screened in for its seabirds (red-throated diver, black-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | | Wester Ross Lochs SPA | 60 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| R4_6_to_Penwortham | | Ribble and Alt Estuaries SPA/ Ramsar | Within the HNDFUE corridor | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England |

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| | | on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA/Ramsar however, pink-footed goose, golden plover and lapwing which the site is designated for has a foraging range of 15-20 km and Bewick's swan and whooper swan range is 10 km from the SPA / Ramsar. The sea bird assemblage generally feed out at sea and not inland, with the exception of gulls black-headed gull (*Larus ridibundus*) and lesser black-backed gull (*Larus fuscus*). It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to the site being located within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Liverpool Bay SPA | Within the HNDFUE corridor | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea with the exception of gulls (little gull). It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground**. Potential adverse effect on the integrity of the site for little gull if OHL is required due to the birds coming inland to feed and the site being located within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Morecambe Bay and Duddon Estuary SPA/ Ramsar | 7 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed and golden plover which the site is designated for has a foraging range of 15-20 km and whooper swan (*Cygnus cygnus*) foraging range is 10 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor |

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| | | after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for pink-foot goose, golden plover and whooper swan if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Martin Mere SPA/Ramsar | 11 km | Site was screened in for its waterfowl species. Waterfowl will generally stay within 2 km of the SPA; however, pink-footed goose for which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for pink-footed goose is if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Mersey Narrows and North Wirral Foreshore SPA / Ramsar | 30 km | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea, with the exception of the gull species (little gull). It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for little gull if OHL is required, due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Anglesey Terns / Morwenoliaid Ynys Môn<br>SPA | 54 km | Site was screened in for the seabird assemblage (terns) that have a foraging range of 100 km. The sea birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required, due to this species feeding out at sea. |
| Solway Firth SPA | 63 km | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea, with the exception of the gull species (herring gull, common gull, and black-headed gull). It is currently unknown if there will be a section of |

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| | | onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required, due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons**. |
| Irish Sea Front SPA | 66 km | Site was screened in for Manx shearwater. This species has a potential foraging range of 100 km (or more) which includes the corridor. The sea bird feeds out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the seabirds not coming inland to feed. |
| Upper Solway Flats & Marshes Ramsar | 91 km | Site was screened in for the seabird assemblage (lesser black-backed gull (Larus fuscus)) that have a foraging range of 100 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gulls if OHL is required, due to them coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Outer Ards SPA | 99 km | Site was screened in for the seabird assemblage (Arctic tern) that have a foraging range of 100 km. The sea birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required, due to this species feeding out at sea. |
| Ailsa Craig SPA | 128 km | Site was screened in for lesser black-backed gull that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to** |

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| | | | **feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| R4_4_to_Bodelwyddan | Liverpool Bay SPA | Within HND corridor | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea with the exception of gulls (little gull). It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for little gull if OHL is required due to the birds coming inland to feed and the site being located within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | The Dee Estuary SPA | 9 km | Site was screened in for its seabird, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA but impacts from electricity infrastructure can arise up to 10 km away. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site due to the presence of gulls in the waterbird assemblage, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Anglesey Terns / Morwenoliaid Ynys Môn SPA | 9 km | Site was screened in for the seabird assemblage (terns) that have a foraging range of 100 km. The sea birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required, due to this species feeding out at sea. |
| | Ynys Seiriol / Puffin Island SPA | 11 km | Site was screened in for the seabird assemblage (great cormorant) that have a foraging range of 35 km. Cormorant will feed in the water. It is currently unknown if there will be a section of onshore |



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| | | | cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due this species feeding within the water and the fact that the orientation of the landfall to the SPA means SPA birds will not need to traverse the landfall to forage in the sea. |
| | Traeth Lafan/ Lavan Sands, Conway Bay SPA | 16 km | Site was screened in for its waterfowl and wader species. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA and there is low risk from electricity infrastructure at distances greater than 10 km. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the proximity of the site from the corridor. |
| | Mersey Narrows and North Wirral Foreshore SPA/Ramsar | 21 km/30 km | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea, with the exception of the gull species (little gull). It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for little gull if OHL is required, due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ribble and Alt Estuaries SPA/ Ramsar | 35 km | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea, with the exception of gulls black-headed gull and lesser black-backed gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required, due to the species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

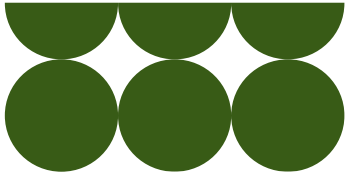
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| | Morecambe Bay and Duddon Estuary SPA/Ramsar | 51 km | Site was screened in for its seabirds species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of gulls Mediterranean gull (*Larus melanocephalus*), lesser black-backed gull, little gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. Potential adverse effect on the integrity of the site for the gull species if OHL is required, due to these species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons. |
| | Northern Cardigan Bay/Gogledd Bae Ceredigion SPA | 56 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | Irish Sea Front SPA | 59 km | Site was screened in for Manx shearwater. This species has a potential foraging range of 100 km (or more) which includes the corridor. The sea bird feeds out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the seabirds not coming inland to feed. |
| | Bowland Fells SPA | 81 km | Site was screened in for the seabird assemblage (lesser black-backed gull) that have a foraging range of 100 km. Gulls will generally forage, in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. Potential adverse effect on the integrity of the site is for gulls if OHL is required due to this species coming inland to feed, although standard |

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| | | mitigation measures are available such as deflectors and careful design of the OHL and pylons. |
| | Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island SPA | 82 km | Site was screened in for Manx shearwater that have a foraging range of over 100 km. The sea birds feed out at sea and some will feed in coastal areas. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | Solway Firth SPA | 89 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These species are: herring gull, common gull and black-headed gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons. |
| | Ailsa Craig SPA | 180 km | Site was screened in for the seabird assemblage (lesser black-backed gull) that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Skomer, Skokholm and the Seas off Pembrokeshire / Sgomer, Sgogwm a Moroedd Penfro SPA | 199 km | Site was screened in for the seabird assemblage (lesser black-backed gull) that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard** |

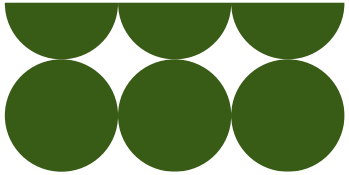
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| | | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ailsa Craig SPA<br>Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA | 180 km<br>199 km | These sites were screened in for lesser black-backed gull that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| R4_5_to_Penwortham | Ribble and Alt Estuaries SPA/ Ramsar (Includes compensation area Hesketh Out Marsh West) | Within the HNDFUE corridor | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar; however, pink-footed goose, golden plover and lapwing for which the site is designated has a foraging range of 15-20 km and Bewick's swan and whooper swan range is 10 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland with the exception of gulls black-headed gull (*Larus ridibundus*) and lesser black-backed gull (*Larus fuscus*). It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to corridor being within the SPA / Ramsar and the waders, waterfowl and gulls its designated for, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Liverpool Bay SPA | Within the HNDFUE corridor | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea with the exception of gulls (little gull). It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried |

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| | | | underground. **Potential adverse effect on the integrity of the site for little gull if OHL is required due to the birds coming inland to feed and the site being located within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Martin Mere SPA/Ramsar | 11 km | Site was screened in for its waterfowl species. Waterfowl will generally stay within 2 km of the SPA/ Ramsar; however, pink-footed goose for which the site is designated has a foraging range of 15-20 km from the SPA / Ramsar. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for pink-footed goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Morecambe Bay and Duddon Estuary SPA/ Ramsar | 7 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar; however, pink-footed and golden plover for which the site is designated has a foraging range of 15-20 km and whooper swan foraging range is 10 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland, with the exception of gulls Mediterranean gull, lesser black-backed gull, little gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for pink-foot goose, golden plover, the gull species and whooper swan if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Bowland Fells SPA | 16 km | Site was screened in for the seabird assemblage (lesser black-backed gull) that have a foraging range of 100 km. Gulls will |

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| | | generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gulls if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Mersey Narrows and North Wirral Foreshore SPA | 30 km | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea, with the exception of the gull species (little gull). It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for little gull if OHL is required, due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Mersey Narrows and North Wirral Foreshore SPA | 30 km | Site was screened in for the seabird assemblage that have a foraging range of 100 km. The sea birds feed out at sea, with the exception of the gull species (little gull). It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for little gull if OHL is required, due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | The Dee Estuary SPA/ Ramsar | 31 km | Site was screened in for its seabird. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to gulls in the assemblage, which feed inland,** |



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| | | | **although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Anglesey Terns / Morwenoliaid Ynys Môn<br>SPA | 53 km | Site was screened in for the seabird assemblage (terns) that have a foraging range of 100 km. The sea birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required, due to this species feeding out at sea. |
| | Irish Sea Front SPA | 85 km | Site was screened in for Manx shearwater. This species has a potential foraging range of 100 km (or more) which includes the corridor. The sea bird feeds out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the seabirds not coming inland to feed. |
| | Solway Firth SPA | 89 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These species are: herring gull, common gull and black-headed gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ailsa Craig SPA | 183 km | Site was screened in for lesser black-backed gull that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to this species coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

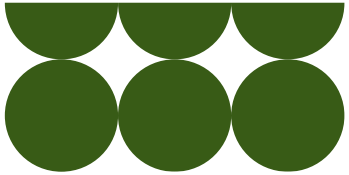


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| SW_N1_to_Spittal | Assynt Lochs SPA | 88 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | Auskerry SPA | 74 km | Site was screened in for its seabirds (arctic tern and storm petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | Caithness and Sutherland Peatlands Ramsar / SPA | 4 km | Site was screened in for seabirds, waterfowl and birds of prey. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea birds feed out at sea and not inland the birds of prey have foraging ranges which include the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Calf of Eday SPA | 81 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These species include great black-headed gull which forages inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland,** |

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| | | | **although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Cape Wrath SPA | 49 km | Site was screened in for specified seabird species (fulmar, black-legged kittiwake, puffin, razorbill and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Copinsay SPA | 55 km | Site was screened in for its seabird assemblage which may include birds which forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Cromarty Firth SPA | 85 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | East Caithness Cliffs SPA | 20 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These species include herring gull and great black-headed gull which forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is |

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| | | | buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Handa SPA | 79 km | Site was screened in for specified seabird species (razorbill, northern gannet, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Hoy SPA | 22 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These species include herring gull and great black-headed gull which forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Inverpolly, Loch Urigill and Nearby Lochs SPA | 90 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | Lairg and Strathbrora Lochs SPA | 54 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential |

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| | | | foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | Marwick Head SPA | 44 km | Site was screened in for specified seabird species (black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Moray Firth SPA | 32 km | Site was screened in for its seabirds (red-throated diver, great northern diver, shag (*Phalacrocorax aristotelis*)). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | North Caithness Cliffs SPA | Within the HND/HNDFUE corridor | Site was screened in for its seabirds, waterbird assemblage and peregrine falcon. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor however they feed out at sea and not inland. Waterbirds and peregrine falcon will forage inland. The seabird assemblage may include gulls which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. **Potential adverse effect on the integrity of the site if OHL is required as the** |



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| | | **designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | North Orkney SPA | 50 km | Site was screened in for its seabirds (great northern diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | North Rona and Sula Sgeir SPA | 92 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | Orkney Mainland Moors SPA | 42 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Papa Westray (North Hill and Holm) SPA | 84 km | Site was screened in for its seabirds (arctic tern and arctic skua). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |

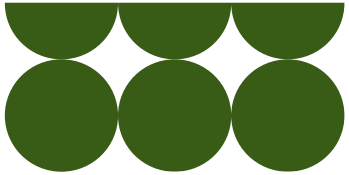
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| | Pentland Firth Islands SPA | 84 km | Site was screened in for its seabirds (arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | Rousay SPA | 84 km | Site was screened in for specified seabird species (fulmar, black-legged kittiwake, Arctic skua, Arctic tern and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Scapa Flow SPA | 27 km | Site was screened in for its seabirds (arctic tern, fulmar, black-legged kittiwake, arctic skua, common guillemot). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| | Sule Skerry and Sule Stack SPA | 16 km | Site was screened in for specified seabird species (gannet, Leach's petrel, puffin, Shag, storm petrel and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the |

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| | | | cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | West Westray SPA | 70 km | Site was screened in for specified seabird species (razorbill, fulmar, black-legged kittiwake, Arctic skua, Arctic tern and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| R4_1_to_Birkhill Wood | Greater Wash SPA | Within the HND/HNDFUE corridor | Site was screened in for its seabirds and wader species: Sanderling (*Calidris alba*). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Sanderling is a winter migrant and will feed around the intertidal zone and inland wetlands and the seabird assemblage feed out at sea and not inland, with the exception of gulls. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for sanderling and little gull if OHL is required, due to the site being within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| R4_2_to_Birkhill Wood | Greater Wash SPA | Within the HND/HNDFUE corridor | Site was screened in for its seabirds and wader species: Sanderling (*Calidris alba*). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Sanderling is a winter migrant and will feed around the intertidal zone and inland wetlands and the seabird assemblage feed out at sea and not inland, with the exception of |

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| | | | gulls. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for sanderling and little gull if OHL is required, due to the site being within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| PA_1_to_Birkhill Wood | Greater Wash SPA | Within the HND/HNDFUE corridor | Site was screened in for its seabirds and wader species: Sanderling (*Calidris alba*). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Sanderling is a winter migrant and will feed around the intertidal zone and inland wetlands and the seabird assemblage feed out at sea and not inland, with the exception of gulls. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for sanderling and little gull if OHL is required, due to the site being within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_E1a_to_LincsConnectionNode | Buchan Ness to Collieston Coast SPA | 95 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Coquet Island SPA | 80 km | Site was screened in for its tern species and seabird assemblage which the site is designated for have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the |

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| | | corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Farne Islands SPA | 81 km | Site was screened in for tern species and guillemot and for a seabird assemblage which have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Flamborough & Filey Coast SPA | 37 km | Site was screened in for specified seabird species (razorbill, northern gannet, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Fowlsheugh SPA | 80 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried |

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| | | underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Greater Wash SPA | Within the HND or HNDFUE corridor | Site was screened in for its seabirds and wader species: Sanderling. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Sanderling is a winter migrant and will feed around the intertidal zone and inland wetlands and the seabird assemblage feed out at sea and not inland, with the exception of gulls. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for sanderling and little gull if OHL is required, due to the site being within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Gibraltar Point SPA/Ramsar | 15 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on the integrity of the site due to the proximity of the site from the corridor if OHL is required. |
| Humber Estuary SPA/Ramsar (Including compensation areas Alkborough, Chowder Ness, Paul Holme Strays, Skeffling, and Welwick) | 3.5 km | Site was screened in for its seabirds (little tern), waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar; however, golden plover and lapwing for which the site is |



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| | | designated has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for golden plover and lapwing if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| North Norfolk Coast SPA/Ramsar | 33 km | Site was screened in for its seabird assemblage. The species of seabird for which the site is designated (terns) have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Northumberland Marine SPA (Including compensation area Alnmouth 2) | 80 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds not coming inland. |
| Northumbria Coast SPA/Ramsar | 81 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km (or more) which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds not coming inland. |
| Outer Firth of Forth and St Andrews Bay Complex SPA (Scotland) | 68 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the gulls (herring gull, common gull, little gull and black-headed gull) which |

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| | | | will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required due to the birds coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Teesmouth and Cleveland Coast SPA | 98 km | Site was screened in for its seabird assemblage. The species of seabird for which the site is designated (terns) have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| | The Wash SPA/Ramsar | 17 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required. |
| | Ythan Estuary and Mekle Loch Ramsar | 96 km | Site was screened in for its seabirds (sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| SW_W1_to_Ballantrae | Ailsa Craig SPA | 7 km | Site was screened in for the seabird assemblage (lesser black-backed gull (*Larus fuscus*)) that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required, due to** |

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| | | **them coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Belfast Lough Ramsar/SPA | 54 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Coll and Tiree SPA | 37 km | Site was screened in for its seabirds (great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Glas Eileanan SPA | 77 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Gruinart Flats, Islay Ramsar/SPA | 17 km | Site was screened in for its waterbird species (barnacle goose, Greenland white-fronted goose, Canadian light-bellied brent goose). Barnacle goose have a maximum foraging range of 25 km which includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| | Kintyre Goose Roosts Ramsar/SPA | 20 km | Site was screened in for Greenland white-fronted goose which has a foraging range of 5-8 km which is outside of the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Knapdale lochs SPA | 51 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Laggan, Islay SPA | 15 km | Site was screened in for its waterbird species (barnacle goose and Greenland white-fronted goose). Barnacle goose have a maximum foraging range of 25 km which includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Larne Lough Ramsar/SPA | 40 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the mediterranean gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Loch Ken and River Dee Marshes SPA | 52 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed |

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| | | | out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Loch Shiel SPA | 94 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Mingulay and Berneray SPA | 97 km | Site was screened in for the seabirds Arctic tern Razorbill, Puffin, Fulmar, Shag, Black-legged kittiwake and common guillemot that have a foraging range of 100 km. The sea birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required, due to this species feeding out at sea. |
| | North Colonsay and Western Cliffs SPA | 23 km | Site was screened in for specified seabird species (black-legged guillemot and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Outer Ards SPA | 54 km | Site was screened in for the seabirds (Arctic tern) that have a foraging range of 100 km. The sea birds feed out at sea. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required, due to this species feeding out at sea. |

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| | Rinns of Islay Ramsar/SPA | 9 km | Site was screened in for its species of waterfowl, waders and birds of prey. Whooper swan and Greenland white-fronted goose have foraging ranges of less than 9 km.<br>Hen harriers forage inland and have a maximum foraging range of 10 km.<br>It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the hen harriers feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Rum SPA | 96 km | Site was screened in for its seabirds (red-throated diver, Manx shearwater, common guillemot). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Solway Firth SPA | 45 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull, common gull and black-headed gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Sound of Gigha SPA | 48 km | Site was screened in for its seabirds (great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the |

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| | | landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Strangford Lough SPA / Ramsar | 66 km | Site was screened in for its seabirds (sandwich tern and common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Treshnish Isles SPA | 46 km | Site was screened in for its seabirds (storm petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Upper Solway Flats & Marshes Ramsar | 88 km | Site was screened in for the seabird assemblage (lesser black-backed gull) that have a foraging range of 100 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gulls if OHL is required, due to them coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ribble and Alt Estuaries SPA<br>Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA | 183 km<br>148 km | These sites were screened in for the seabird assemblage (lesser black-backed gull) that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard** |

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| | | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Shetland_to_Blackhillock | Auskerry SPA | 41 km | Site was screened in for its seabirds (arctic tern and storm petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Bluemull and Colgrave Sounds SPA | 31 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Buchan Ness to Collieston Coast SPA | 60 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Caithness and Sutherland Peatlands SPA/Ramsar | 8 km | Site was screened in for seabirds, waterfowl and birds of prey. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea birds feed out at sea and not inland. The birds of prey species (hen harrier and golden eagle (*Aquila chrysaetos*)) and golden plover have foraging ranges which include the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the |

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| | | cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Caithness Lochs SPA/Ramsar | 18 km | Site was screened in for seabirds, the species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland,<br>The site was screened in for greylag goose which has a foraging range 15-20 km which is within the corridor.<br>The site was screened in for birds of prey, which have foraging ranges below 18 km.<br>It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the greylag goose feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Calf of Eday SPA | 62 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Copinsay SPA | 30 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there |

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| | | will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Cromarty Firth SPA | 49 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | East Caithness Cliffs SPA | 1.9 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull and great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | East Mainland Coast, Shetland SPA | Within the HND or HNDFUE corridor | Site was screened in for its seabirds (great-northern diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Fair Isle SPA | 22 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, gannet, great skua, guillemot, puffin, razorbill, shag, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over |

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| | | | 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Fetlar SPA | 27 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, and great skua) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Fowlsheugh SPA | 77 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Hermaness, Saxa Vord and Valla Field SPA | 47 km | Site was screened in for specified seabird species (Atlantic puffin, great skua, fulmar, red-throated diver, northern gannet and black-legged kittiwake and common guillemot) and for a seabird assemblage all of which have a potential foraging range of over |

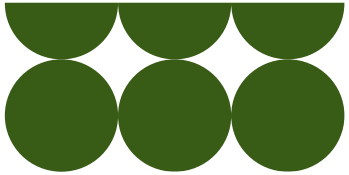
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| | | | 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Hoy SPA | 42 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Inner Moray Firth SPA/Ramsar | 50 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | | Inverpolly, Loch Urigill and Nearby Lochs SPA | 91 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | | Lairg and Strath Bora Locha SPA | 47 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential |

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| | | foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Loch of Strathbeg SPA/Ramsar | 57 km | Site was screened in for its seabirds (sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Loch Spynie SPA/Ramsar | 9 km | Site was screened in for greylag goose which has a foraging range 15-20 km which is within the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the greylag goose feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Lochs of Spiggie and Brow SPA | 17 km | Site was screened in for Whooper swan, which have a foraging range of less than 5 km excludes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Marwick Head SPA | 74 km | Site was screened in for specified seabird species (black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are** |

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| | | **available such as deflectors and careful design of the OHL and pylons.** |
| | Moray and Nairn Coast SPA/Ramsar | Within the HND or HNDFUE corridor | Site was screened in for Osprey (*Pandion haliaetus*) (foraging range 10-20 km) and waterbirds (minimum foraging range of 2 km) which are within the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated birds may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Moray Firth SPA | Within the HND or HNDFUE corridor | Site was screened in for seabirds (foraging range 100 km or more) and waterbirds (minimum foraging range of 2 km) which are within the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the waterbirds may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Mousa SPA | 11 km | Site was screened in for its seabirds (Arctic tern, Storm petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Muir of Dinnet SPA | 47 km | Site was screened in for its seabirds (great northern diver, red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |

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| | North Caithness Cliffs SPA | 18 km | Site was screened in for its seabirds, waterbird assemblage and peregrine falcon. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor however they feed out at sea and not inland. The peregrine falcon has a maximum foraging range of 18 km which includes the corridor. Waterbirds will forage inland and some waterbirds have a range on excess of 18 km. The seabird assemblage may include gulls which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | North Orkney SPA | 40 km | Site was screened in for its seabirds (great northern diver, red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Noss SPA | Within the HND or HNDFUE corridor | Site was screened in for specified seabird species (fulmar, gannet, great skua, black-legged kittiwake, puffin and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Orkney Mainland Moors SPA | 51 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential |

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| | | | foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | | Otterswick and Graveland SPA | 25 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | | Papa Stour SPA | 25 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | | Papa Westray (North Hill and Holm) SPA | 79 km | Site was screened in for its seabirds (Arctic skua and Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | | Pentland Firth Island SPA | 23 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |



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| | Ramna Stacks and Gruney SPA | 39 km | Site was screened in for its seabirds (Leach's petrel (*Hydrobates leucorhous*)). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | River Spey – Insh Marshes Ramsar | 71 km | Site was screened in for its seabirds (assemblage). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Ronas Hill – North Roe and Tingon SPA/Ramsar | 26 km | Site was screened in for its seabirds (great skua and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Rousay SPA | 67 km | Site was screened in for specified seabird species (fulmar, black-legged kittiwake, Arctic skua, Arctic tern and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| | Scapa Flow SPA | 31 km | Site was screened in for its seabirds (great northern diver, black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Seas off Foula SPA | 34 km | Site was screened in for its seabirds (Atlantic puffin, fulmar, Arctic skua, Great skua and common guillemot). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Foula SPA | 45 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, great skua, Leach's petrel, puffin, razorbill, red-throated diver, shag, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Sumburgh Head SPA | 11 km | Site was screened in for specified seabird species (fulmar, Arctic tern, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect |

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| | | | on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Tips of Corsemaul and Tom Mor SPA | 9 km | Site was screened in for common gull which forages inland and has a range of 100 km which is within the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the greylag goose feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Troup, Pennan and Lion's Heads SPA | 34 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | West Westray SPA | 77 km | Site was screened in for specified seabird species (razorbill, fulmar, black-legged kittiwake, Arctic skua, Arctic tern and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| | Ythan Estuary and Mekle Loch Ramsar | 55 km | Site was screened in for its seabirds (Sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA | 55 km | Site was screened in for its seabirds (Sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| SW_E1a_to_Branxton | Coquet Island SPA | 65 km | Site was screened in for its tern species and seabird assemblage which the site is designated for have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Farne Islands SPA | 30 km | Site was screened in for tern species and guillemot and for a seabird assemblage which have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| Firth of Forth SPA/Ramsar | 6 km | Site was screened in for its water birds and seabirds. The species of seabird for which the site is designated (common tern, red-throated diver) have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. Pink-footed goose has a foraging range of 15-20 km and this included the corridor. Golden plovers have a maximum range of 15 km and this includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the named species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Forth Islands SPA | 10 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the lesser black-backed which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Fowlsheugh SPA | 80 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| Imperial Dock Lock, Leith SPA | 42 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Lindisfarne SPA/Ramsar | 23 km | Site was screened in for its seabird species. The species of seabird for which the site is designated (little tern and roseate tern) have a potential foraging range of 100 km or more which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds feeding out at sea. |
| Loch Leven SPA | 56 km | Site was screened in for its seabirds (cormorant) which has a maximum foraging range of 35 km which excludes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Northumbria Coast SPA/Ramsar | 24 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km (or more) which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds not coming inland. |
| Northumberland Marine SPA (Including compensation area Alnmouth 2) | 23 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall |

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| | | point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds not coming inland. |
| Outer Firth of Forth and St Andrews Bay Complex SPA | Within the HND or HNDFUE corridor | Site was screened in for its seabird and waterbird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the black-headed gull which will forage inland. Most species of waterfowl have a minimum foraging range of 2 km and can forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required due to the birds coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| St Abb's Head to Fast Castle SPA | 4 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Ythan Estuary and Mekle Loch Ramsar | 95 km | Site was screened in for its seabirds (Sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Ythan Estuary, Sand of Forvie and Meikle Loch SPA | 87 km | Site was screened in for its seabirds (Sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed |

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| | | | out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| SW_E1a_to_SW_E1c_2 | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| SW_E1c_1_to_LincsCN | Greater Wash SPA | Within the HND or HNDFUE corridor | Site was screened in for its seabirds and wader species: Sanderling (*Calidris alba*). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Sanderling is a winter migrant and will feed around the intertidal zone and inland wetlands and the seabird assemblage feed out at sea and not inland, with the exception of gulls. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for sanderling and little gull if OHL is required, due to the site being within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Humber Estuary SPA/Ramsar (Including compensation areas Alkborough, Chowder Ness, Paul Holme Strays, Skeffling, and Welwick) | 2 km | Site was screened in for its seabirds (little tern), waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar; however, golden plover and lapwing which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for golden plover and lapwing if OHL is required, although standard mitigation measures are** |

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| | | | **available such as deflectors and careful design of the OHL and pylons.** |
| | Gibraltar Point SPA/Ramsar | 15 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on the integrity of the site due to the proximity of the site from the corridor if OHL is required. |
| | The Wash SPA/Ramsar | 18 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required. |
| | Flamborough & Filey Coast SPA | 32 km | Site was screened in for specified seabird species (razorbill, northern gannet, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | North Norfolk Coast SPA/Ramsar | 35 km | Site was screened in for its seabird assemblage. The species of seabird for which the site is designated (terns) have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown |

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| | | if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | 68 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds not coming inland. |
| | Ouse Washes SPA/Ramsar | 77 km | Due to the distance from the site, there are no likely impact pathways for waterfowl or waders for which the site is designated, as these species have a potential foraging range of 20 km which includes the corridor.<br>Great cormorant has a maximum foraging range of 35 km, as the site lies outside of this range, it is unlikely there will be impact pathways for this species. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| | Outer Firth of Forth and St Andrews Bay Complex SPA (Scotland) | 79 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the gulls (herring gull, common gull, little gull and black-headed gull) which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required due to the birds coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Northumbria Coast SPA/Ramsar | 81 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km (or more) which includes the corridor. The sea bird |

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| | | | assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds not coming inland. |
| | Coquet Island SPA | 81 km | Site was screened in for its tern species and seabird assemblage which the site is designated for have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Farne Islands SPA | 81 km | Site was screened in for tern species and guillemot and for a seabird assemblage which have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Lindisfarne SPA/Ramsar | 90 km | Site was screened in for its seabird species. The species of seabird for which the site is designated (little tern (*Sterna albifrons*) and roseate tern (*Sterna dougallii*)) have a potential foraging range of 100 km or more which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds feeding out at sea. |

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| | Teesmouth and Cleveland Coast SPA/Ramsar | 91/94 km | Site was screened in for its seabird assemblage. The species of seabird for which the site is designated (terns) have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| | Fowlsheugh SPA | 99 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_E1c_2_to_Weston Marsh | The Wash SPA / Ramsar | Within the HNDFUE corridor | Site was screened in for its seabird, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA. The sea bird assemblage (terns) feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to the site being within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Greater Wash SPA / Ramsar | Within the HNDFUE corridor | Site was screened in for its seabirds and wader species: Sanderling (*Calidris alba*). The species of seabird for which the site is designated have a potential foraging range of 100 km which |

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| | | includes the corridor. Sanderling is a winter migrant and will feed around the intertidal zone and inland wetlands and the seabird assemblage feed out at sea and not inland, with the exception of gulls. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for sanderling and little gull if OHL is required, due to the site being within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Gibraltar Point SPA / Ramsar (Including compensation areas Alkborough, Chowder Ness, Paul Holme Strays, Skeffling, and Welwick) | 5 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on the integrity of the site due to the proximity of the site from the corridor if OHL is required. |
| Humber Estuary SPA / Ramsar (Including compensation areas Alkborough, Chowder Ness, Paul Holme Strays, Skeffling, and Welwick) | 5 km | Site was screened in for its seabirds (little tern), waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, golden plover and lapwing which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for golden plover and lapwing if OHL is required, although standard mitigation measures are** |

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| | | **available such as deflectors and careful design of the OHL and pylons**. |
| North Norfolk Coast SPA / Ramsar | 23 km | Site was screened in for its seabird assemblage. The species of seabird for which the site is designated (terns) have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Flamborough & Filey Coast SPA | 36 km | Site was screened in for specified seabird species (razorbill, northern gannet, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Ouse Washes SPA / Ramsar | 37 km | Due to the distance from the site, there are no likely impact pathways for waterfowl or waders for which the site is designated, as these species have a potential foraging range of 20 km which includes the corridor.<br>Great cormorant has a maximum foraging range of 35 km, as the site lies outside of this range, it is unlikely there will be impact pathways for this species. |
| Upper Nene Valley Gravel Pits SPA / Ramsar | 52 km | Due to the distance from the site, there are no likely impact pathways for waterfowl or waders for which the site is designated, as these species have a potential foraging range of 20 km which includes the corridor.<br>Great cormorant has a maximum foraging range of 35 km, as the Habitat site lies outside of this range, it is unlikely there will be impact pathways for this species. |

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| Northumberland Marine SPA (Including compensation area Alnmouth 2) | 73 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds not coming inland. |
| Northumbria Coast SPA / Ramsar | 86 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km (or more) which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds not coming inland. |
| Coquet Island SPA | 86 km | Site was screened in for its tern species and seabird assemblage which the site is designated for have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Farne Islands SPA | 86 km | Site was screened in for tern species and guillemot and for a seabird assemblage which have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard** |

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| | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Outer Firth of Forth and St Andrews Bay Complex SPA / Ramsar (Scotland) | 90 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the gulls (herring gull, common gull, little gull and black-headed gull) which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required due to the birds coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Lindisfarne SPA / Ramsar | 95 km | Site was screened in for its seabird species. The species of seabird for which the site is designated (little tern (*Sterna albifrons*) and roseate tern (*Sterna dougallii*)) have a potential foraging range of 100 km or more which includes the corridor. The sea bird assemblage feed out at sea and not inland. It Is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds not coming inland. |
| Teesmouth and Cleveland Coast SPA / Ramsar<br>(Including compensation area Seal Sands) | 96 km | Site was screened in for its seabird assemblage. The species of seabird for which the site is designated (terns) have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Great Yarmouth North Denes SPA / Ramsar | 98 km | Site was screened in for its species of seabird (little tern) for which the site is designated, which have a potential foraging range of 100 km which includes the corridor.) These species feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. |

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| | | | However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| | Alde-Ore Estuary SPA<br>Forth Islands SPA | 127 km<br>138 km | These sites were screened in for lesser black-backed gull that have an extended foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_E2a_1_to_SW_E2a_2 | - | - | EEln3 corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| SW_E2a_2_to_Near Richborough | Abberton Reservoir SPA/Ramsar | 60 km | Site was screened in for its seabirds (cormorant) which has a maximum foraging range of 35 km which excludes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Thanet Coast and Sandwich Bay SPA/ Ramsar | Within the HND or HNDFUE corridor | Site was screened in for the seabirds (little tern) and waterbirds (golden plover and ruddy turnstone). Little terns have a foraging range of 100 km and feed out at sea and not inland. Golden plover have a maximum foraging range of 11 km and waterbirds in general have a precautionary inland range of 2 km. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Outer Thames Estuary SPA | 4 km | Site was screened in for its seabird assemblage. The species of seabird for which the site is designated (terns) have a potential foraging range of 100 km which includes the corridor. The sea bird |

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| | | assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Stodmarsh SPA/Ramsar | 4.5 km | Site was screened in for all bird species. Waterbirds in general have a precautionary inland range of 2 km which is outside of the corridor. Hen harrier has a foraging range of 10 km and greater white-fronted goose 5-8 km both of which include the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| The Swale SPA/ Ramsar | 18 km | Site was screened in for all bird species. Mediterranean gull have a foraging range of 100 km and forage inland. Waterbirds in general have a precautionary inland range of 2 km which is outside of the corridor. Hen harrier has a foraging range of 10 km and greater white-fronted goose 5-8 km. All of which include the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Foulness (Mid-Essex Coast Phase 5) SPA/Ramsar | 32 km | Site was screened in for its seabird assemblage. The species of seabird for which the site is designated (terns) have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Medway Estuary and Marshes SPA/Ramsar | 36 km | Site was screened in for its seabirds. The tern species for which the site is designated have a potential foraging range of 100 km which |

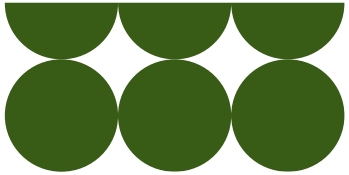
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| | | includes the corridor; however they feed out at sea and not inland. Cormorants have a foraging range of 35 km which is outside of the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Greater Wash SPA | 46 km | Site was screened in for its seabirds. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The seabird assemblage feed out at sea and not inland, with the exception of the little gull. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for sanderling and little gull if OHL is required, due to the site being within the corridor, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Colne Estuary (Mid-Essex Coast Phase 2) SPA/Ramsar | 50 km | Site was screened in for its seabirds. The little tern for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Blackwater Estuary (Mid-Essex Coast Phase 4) SPA/Ramsar | 51 km | Site was screened in for its seabirds. The little tern for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Alde-Ore Estuary SPA/Ramsar | 51 km | Site was screened in for its seabirds. The terns (little and sandwich) for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. |

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| | | However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland |
| Hamford Water SPA | 56 km | Site was screened in for its seabirds. The little tern for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Hamford Water Ramsar | 57 km | Site was screened in for its seabirds. The little tern for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Minsmere-Walberswick SPA/Ramsar | 58 km | Site was screened in for its seabirds. The little tern for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Great Yarmouth North Denes SPA | 61 km | Site was screened in for its seabirds. The little tern for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Breydon Water SPA/Ramsar | 63 km | Site was screened in for its seabirds. The little tern for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse |

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| | | | effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| | Benacre to Easton Bavents SPA | 63 km | Site was screened in for its seabirds. The little tern for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| | Stour and Orwell Estuaries SPA/Ramsar (including compensation areas Trimley Marsh and Deveraux Farm) | 64 km | Site was screened in for its seabirds (cormorant) which has a maximum foraging range of 35 km which excludes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Flamborough and Filey Coast SPA | 89 km | Site was screened in for its seabirds. The bird species for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| SW_E2a_2_to_SW_E1c_1 | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| SW_E2b_to_Peterhead 2 | Buchan Ness to Collieston Coast SPA | 95 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated species if OHL is required, although standard** |

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| | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Fowlsheugh SPA | 98 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Loch of Strathbeg SPA/Ramsar | 6 km | Site was screened in for its seabirds (sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Moray Firth SPA | 49 km | Site was screened in for its seabirds (red-throated diver, great northern diver, shag (*Phalacrocorax aristotelis*)). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to this species feeding at sea. |
| Muir of Dinnet SPA | 73 km | Site was screened in for its seabirds (great northern diver, red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no |

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| | | adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Tips of Corsemaul and Tom Mor SPA | 62 km | Site was screened in for common gull which forages inland and has a range of 100 km which is within the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the greylag goose feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Troup, Pennan and Lion's Heads SPA | 62 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Ythan Estuary and Mekle Loch Ramsar | 12 km | Site was screened in for its seabirds (Sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Ythan Estuary, Sand of Forvie and Meikle Loch SPA | 8 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose (*Anser brachyrhynchus*) for which the site is |



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| | | | designated has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_E2b_to_SW_E2a_1 | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| SW_E3_to_Fiddes | Buchan Ness to Collieston Coast SPA | 46 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Firth of Forth Ramsar/SPA | 59 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the gulls (herring gull, common gull, little gull and black-headed gull) which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required due to the birds coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| Firth of Tay & Eden Estuary SPA | 41 km | Site was screened in for its seabirds. The tern species for which the site is designated have a potential foraging range of 100 km which includes the corridor; however they feed out at sea and not inland. Cormorants have a foraging range of 35 km which is outside of the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to birds not coming inland. |
| Forth Islands SPA | 65 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the lesser black-backed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Fowlsheugh SPA | 3 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Loch of Strathbeg SPA/Ramsar | 74 km | Site was screened in for its seabirds (sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall |

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| | | point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Loch Leven SPA | 90 km | Site was screened in for its seabirds (cormorant) which has a maximum foraging range of 35 km which excludes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Montrose Basin SPA/Ramsar | 11 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar; however, pink-footed goose and greylag goose for which the site is designated have a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and greylag goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Outer Firth of Forth and St Andrews Bay Complex SPA | 71 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the gulls (herring gull, common gull, little gull and black-headed gull) which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site for the gull species if OHL is required due to the birds coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| River Spey – Insh Marshes Ramsar | 97 km | Site was screened in for its seabirds (assemblage). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| St Abb's Head to Fast Castle SPA | 93 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Tips of Corsemaul and Tom Mor SPA | 67 km | Site was screened in for common gull which forages inland and has a range of 100 km which is within the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the greylag goose feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Troup, Pennan and Lion's Heads SPA | 80 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard** |

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| | | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary and Mekle Loch Ramsar | 43 km | Site was screened in for its seabirds (Sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA | 25 km | Site was screened in for its seabirds (Sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| SW_N2_to_Near_Dounreay | Assynt Lochs SPA | 55 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Auskerry SPA | 82 km | Site was screened in for its seabirds (Arctic tern and storm petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Caithness and Sutherland Peatlands Ramsar / SPA | Within the HNDFUE corridor | Site was screened in for seabirds, waterfowl and birds of prey. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea birds feed out at sea and not inland. The birds of prey have foraging |

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| | | | ranges which include the corridor. Waterfowl generally have an inland foraging range of 2 km which is within the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Caithness Lochs SPA/Ramsar | 3 km | Site was screened in for seabirds, the species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland,<br>The site was screened in for greylag goose which has a foraging range 15-20 km which is within the corridor.<br>The site was screened in for birds of prey, which have foraging ranges below 18 km.<br>It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the greylag goose feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Calf of Eday SPA | 89 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These species include great black-headed gull which forages inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Cape Wrath SPA | 8 km | Site was screened in for specified seabird species (fulmar, black-legged kittiwake, puffin, razorbill and guillemot) and for a seabird |

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| | | | assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Copinsay SPA | 64 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | East Caithness Cliffs SPA | 36 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Handa SPA | 35 km | Site was screened in for specified seabird species (fulmar, great skua, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may |

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| | | include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Hoy SPA | 30 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Inverpolly, Loch Urigill and Nearby Lochs SPA | 70 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Lairg and Strath Brora Lochs SPA | 51 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Lewis Peatlands SPA/Ramsar | 57 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which |

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| | | | includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Marwick Head SPA | 56 km | Site was screened in for specified seabird species (black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Moray Firth SPA | 43 km | Site was screened in for its seabirds (red-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | North Caithness Cliffs SPA | Within HNDFUE corridor | Site was screened in for its seabirds, waterbird assemblage and peregrine falcon. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor however they feed out at sea and not inland. Waterbirds and peregrine falcon will forage inland. The seabird assemblage may include gulls which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard** |

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| | | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | North Orkney SPA | 57 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | North Rona and Sula Sgeir SPA | 26 km | Site was screened in for its seabirds. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | North Sutherland Coastal Islands SPA | 17 km | Site was screened in for its waterbird species (barnacle goose and Greenland white-fronted goose). Barnacle goose have a maximum foraging range of 25 km which includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the designated species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Papa Westray (North Hill and Holm) SPA | 96 km | Site was screened in for its seabirds (Arctic skua and Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |

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| | Priest Island (Summer Isles) SPA | 87 km | Site was screened in for its seabirds (storm petrel) The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Rousay SPA | 69 km | Site was screened in for specified seabird species (fulmar, black-legged kittiwake, Arctic skua, Arctic tern and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Scapa Flow SPA | 34 km | Site was screened in for its seabirds (black-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Papa Westray (North Hill and Holm) SPA | 96 km | Site was screened in for its seabirds (Arctic skua and Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |

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| | Sule Skerry and Sule Stack SPA | 25 km | Site was screened in for specified seabird species (gannet, Leach's petrel, puffin, Shag, storm petrel and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | West Westray SPA | 82 km | Site was screened in for specified seabird species (razorbill, fulmar, black-legged kittiwake, Arctic skua, Arctic tern and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_N3_to_Arnish | Assynt Lochs SPA | 40 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Caithness and Sutherland Peatlands SPA | 68 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore |

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| | | | cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Cape Wrath SPA | 45 km | Site was screened in for specified seabird species (fulmar, black-legged kittiwake, puffin, razorbill and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Flannan Isles SPA | 60 km | Site was screened in for its seabirds. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Handa SPA | 32 km | Site was screened in for specified seabird species (razorbill, northern gannet, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Inverpolly, Loch Urigill and Nearby Lochs SPA | 51 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential |

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| | | | foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | | Lairg and Strathbrora Lochs SPA | 54 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | | Lewis Peatlands Ramsar/SPA | Within the HNDFUE Corridor | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | | Loch Maree Ramsar/SPA | 67 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | | Mointeach Scadabhaigh SPA | 77 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |

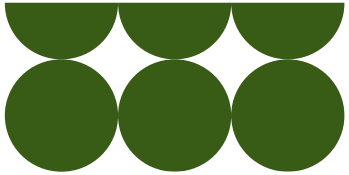
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| | Monach Isles SPA | 97 km | Site was screened in for its seabirds (black guillemot). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | North Rona and Sula Sgeir SPA | 29 km | Site was screened in for its seabirds. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Priest Island (Summer Isles) SPA | 51 km | Site was screened in for its seabirds (storm petrel) The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Seas off St Kilda SPA | 67 km | Site was screened in for specified seabird species (fulmar, northern gannet, storm petrel and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Sule Skerry and Sule Stack SPA | 93 km | Site was screened in for specified seabird species (gannet, Leach's petrel, puffin, Shag, storm petrel and guillemot) and for a seabird assemblage all of which have a potential foraging range of over |

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| | | | 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | The Shiant Isles SPA | 27 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the lesser black-backed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | West Coast of the Outer Hebrides SPA | 36 km | Site was screened in for its seabirds (red-throated diver, black-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Wester Ross Lochs SPA | 61 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |

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| SW_NE1a_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE Corridor | Site was screened in for its seabirds (great-northern diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Noss SPA | 5 km | Site was screened in for specified seabird species (fulmar, gannet, great skua, black-legged kittiwake, puffin and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Papa Stour SPA | 26 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Mousa SPA | 26 km | Site was screened in for its seabirds (Arctic tern, storm petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Fetlar SPA | 27 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, and great skua) and for a seabird assemblage |

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| | | | all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ronas Hill - North Roe and Tingon Ramsar | 27 km | Site was screened in for its seabirds (great skua and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Seas off Foula SPA | 35 km | Site was screened in for its seabirds (Atlantic puffin, fulmar, Arctic skua, Great skua and common guillemot). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Sumburgh Head SPA | 38 km | Site was screened in for specified seabird species (fulmar, Arctic tern, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although** |

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| | | | **standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ramna Stacks and Gruney SPA | 39 km | Site was screened in for its seabirds (Leach's petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Foula SPA | 45 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, great skua, Leach's petrel, puffin, razorbill, red-throated diver, shag, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Hermaness, Saxa Vord and Valla Field SPA | 47 km | Site was screened in for specified seabird species (Atlantic puffin, great skua, fulmar, red-throated diver, northern gannet and black-legged kittiwake and common guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |



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| | Fair Isle SPA | 80 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, gannet, great skua, guillemot, puffin, razorbill, shag, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_NE1b_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE Corridor | Site was screened in for its seabirds (great-northern diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Noss SPA | 7 km | Site was screened in for specified seabird species (fulmar, gannet, great skua, black-legged kittiwake, puffin and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Papa Stour SPA | 26 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed |

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| | | out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Mousa SPA | 27 km | Site was screened in for its seabirds (Arctic tern, Storm petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Fetlar SPA | 27 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, and great skua) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ronas Hill - North Roe and Tingon SPA/Ramsar | 27 km | Site was screened in for its seabirds (great skua and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Seas off Foula SPA | 35 km | Site was screened in for its seabirds (Atlantic puffin, fulmar, Arctic skua, Great skua and common guillemot). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of |

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| | | onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Ramna Stacks and Gruney SPA 40 km | Site was screened in for its seabirds (Leach's petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Sumburgh Head SPA 40 km | Site was screened in for specified seabird species (fulmar, Arctic tern, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Foula SPA 45 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, great skua, Leach's petrel, puffin, razorbill, red-throated diver, shag, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| | Hermaness, Saxa Vord and Valla Field SPA | 46 km | Site was screened in for specified seabird species (Atlantic puffin, great skua, fulmar, red-throated diver, northern gannet and black-legged kittiwake and common guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Fair Isle SPA | 79 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, gannet, great skua, guillemot, puffin, razorbill, shag, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_NE1c_to_Shetland | East Mainland Coast, Shetland SPA | Within the HNDFUE Corridor | Site was screened in for its seabirds (great-northern diver and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Noss SPA | 9 km | Site was screened in for specified seabird species (fulmar, gannet, great skua, black-legged kittiwake, puffin and guillemot) and for a |

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| | | | seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Papa Stour SPA | 26 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Mousa SPA | 27 km | Site was screened in for its seabirds (Arctic tern, Storm petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Fetlar SPA | 26 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, and great skua) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| | Ronas Hill - North Roe and Tingon SPA / Ramsar | 27 km | Site was screened in for its seabirds (great skua and red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Seas off Foula SPA | 35 km | Site was screened in for its seabirds (Atlantic puffin, fulmar, Arctic skua, Great skua and common guillemot). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Ramna Stacks and Gruney SPA | 39 km | Site was screened in for its seabirds (Leach's petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Sumburgh Head SPA | 40 km | Site was screened in for specified seabird species (fulmar, Arctic tern, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| | Foula SPA | 45 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, great skua, Leach's petrel, puffin, razorbill, red-throated diver, shag, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Hermaness, Saxa Vord and Valla Field SPA | 45 km | Site was screened in for specified seabird species (Atlantic puffin, great skua, fulmar, red-throated diver, northern gannet and black-legged kittiwake and common guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Fair Isle SPA | 79 km | Site was screened in for specified seabird species (Arctic skua, Arctic tern, fulmar, gannet, great skua, guillemot, puffin, razorbill, shag, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser** |

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| | | | **black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_NE2_to_Spittal | Auskerry SPA | 29 km | Site was screened in for its seabirds (red-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Caithness and Sutherland Peatlands SPA/Ramsar | Within HNDFUE corridor | Site was screened in for a number of birds of prey which have a foraging range which includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. Site was screened in for hen harrier which has a maximum foraging range of 10 km which includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the bird ore prey species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Caithness Lochs SPA/Ramsar | Within HNDFUE corridor | Site was screened in for a number of birds of prey which have a foraging range which includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. Site was screened in for hen harrier which has a maximum foraging range of 10 km which includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the bird ore prey species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| | Calf of Eday SPA | 50 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These species include great black-headed gull which forages inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Cape Wrath SPA | 77 km | Site was screened in for specified seabird species (razorbill, puffin, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Copinsay SPA | 89 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | East Caithness Cliffs SPA | 75 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage |

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| | | | feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Fair Isle SPA | 22 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These species include herring gull which forages inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Handa SPA | 97 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Hoy SPA | 25 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried |

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| | | | underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Inverpolly, Loch Urigill and Nearby Lochs SPA (Scotland) | 93 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Lairg and Strath Brora Lochs SPA | 56 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Marwick Head SPA | 33 km | Site was screened in for specified seabird species (black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Moray Firth SPA | 43 km | Site was screened in for its seabirds (red-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no |

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| | | | adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | North Caithness Cliffs SPA | 81 km | Site was screened in for specified seabird species (razorbill, puffin, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | North Orkney SPA | 99 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Orkney Mainland Moor SPA | 43 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Papa Westray (North Hill and Holm) SPA | 67 km | Site was screened in for its seabirds (Arctic skua and Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the |

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| | | integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Pentland Firth Islands SPA | 14 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Rousay SPA | 55 km | Site was screened in for specified seabird species (razorbill, puffin, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons. |
| | Scapa Flow SPA | 24 km | Site was screened in for its seabirds (black-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Sule Skerry and Sule Stack SPA | 80 km | Site was screened in for specified seabird species (gannet, guillemot, Leach's petrel, puffin and storm petrel) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the |

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| | | | cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Troup, Pennan and Lion's Heads SPA | 93 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | West Westray SPA | 64 km | Site was screened in for specified seabird species (gannet, guillemot, Leach's petrel, puffin and storm petrel) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_NE3_to_New Deer 2 | Auskerry SPA | 59 km | Site was screened in for its seabirds (Arctic tern and storm petrel). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |

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| | Buchan Ness to Collieston Coast SPA | 23 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Caithness and Sutherland Peatlands SPA | 53 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Caithness Lochs SPA/Ramsar | 55 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Calf of Eday SPA | 81 km | Site was screened in for its species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These species include great black-headed gull which forages inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as the designated species may feed inland,** |

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| | | | **although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Copinsay SPA | 46 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | East Caithness Cliffs SPA | 50 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | | Fowlsheugh SPA | 58 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| | Inner Moray Firth SPA/Ramsar | 95 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Loch of Strathbeg SPA/Ramsar | 7 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose and barnacle goose which the site is designated for have foraging range of 15-20 km and 15-25 km respectively from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and barnacle goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Marwick Head SPA | 92 km | Site was screened in for specified seabird species (black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| | Moray Firth SPA | 28 km | Site was screened in for its seabirds (red-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Muir of Dinnet SPA | 38 km | Site was screened in for its seabirds (great northern diver, red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | North Caithness Cliffs SPA | 48 km | Site was screened in for specified seabird species (razorbill, puffin, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | North Orkney SPA | 56 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |

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| | Orkney Mainland Moor SPA | 68 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Papa Westray (North Hill and Holm) SPA | 98 km | Site was screened in for its seabirds (Arctic skua and Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Pentland Firth Islands SPA | 46 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Rousay SPA | 83 km | Site was screened in for specified seabird species (fulmar, black-legged kittiwake, Arctic skua, Arctic tern and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Scapa Flow SPA | 49 km | Site was screened in for its seabirds (black-throated diver and great northern diver). The species of seabird for which the site is |

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| | | | designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Tips of Corsemaul and Tom Mor SPA | 39 km | Site was screened in for its seabird species, common gull. which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Troup, Pennan and Lion's Heads SPA | 2 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | West Westray SPA | 93 km | Site was screened in for specified seabird species (razorbill, fulmar, black-legged kittiwake, Arctic skua, Arctic tern and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland,** |

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| | | | **although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary and Meikle Loch Ramsar | 19 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary, Sand of Forvie and Meikle Loch SPA | 19 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_NE4_to_New Deer | Auskerry SPA | 89 km | Site was screened in for its seabirds (Arctic tern and storm petrel). The species of seabird for which the site is designated have a |

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| | | potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Buchan Ness to Collieston Coast SPA | 23 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Caithness and Sutherland Peatlands SPA | 43 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Copinsay SPA | 73 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| Cromarty Firth SPA | 82 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| East Caithness Cliffs SPA | 36 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Fowlsheugh SPA | 58 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Hoy SPA | 74 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried |

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| | | underground. **Potential adverse effect on the integrity of the site is for the designated gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Inner Moray Firth Ramsar/SPA | 79 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Lairg and Strath Brora Lochs SPA | 93 km | Site was screened in for its seabirds (black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| Loch of Strathbeg SPA | 23 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, barnacle goose which the site is designated for have foraging range of 15-25 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on barnacle goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Moray Firth SPA | 7 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a |

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| | | potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, barnacle goose which the site is designated for have foraging range of 15-25 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on some SPA waterfowl/waders if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Muir of Dinnet Ramsar/SPA | 54 km | Site was screened in for its seabirds (great northern diver, red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| North Caithness Cliffs SPA | 50 km | Site was screened in for specified seabird species (razorbill, puffin, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| North Orkney SPA | 80 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which |

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| | | includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| Orkney Mainland Moors SPA | 88 km | Site was screened in for its seabirds (red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Pentland Firth Islands SPA | 57 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Scapa Flow SPA | 69 km | Site was screened in for its seabirds (black-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| Tips of Corsemaul and Tom Mor SPA | 30 km | Site was screened in for its seabird species, common gull. which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

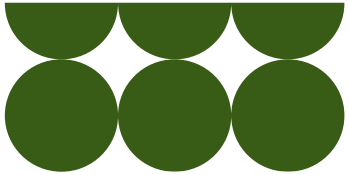
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| | Troup, Pennan and Lion`s Heads SPA | 7 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 18 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar; however, pink-footed goose and lapwing for which the site is designated have a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and lapwing if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_NE6_to_Peterhead 2 | Buchan Ness to Collieston Coast SPA | 5 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard** |

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| | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Caithness and Sutherland Peatlands SPA | 82 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Copinsay SPA | 89 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | East Caithness Cliffs SPA | 75 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Fowlsheugh SPA | 62 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull |

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| | | | which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, pink-footed goose and barnacle goose which the site is designated for have foraging range of 15-20 km and 15-25 km respectively from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on waterbirds if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Moray Firth SPA | 43 km | Site was screened in for its seabirds (red-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Muir of Dinnet SPA | 73 km | Site was screened in for its seabirds (great northern diver, red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore |

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| | | | cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | North Caithness Cliffs SPA | 81 km | Site was screened in for specified seabird species (razorbill, puffin, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | North Orkney SPA | 99 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Pentland Firth Islands SPA | 84 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Scapa Flow SPA | 91 km | Site was screened in for its seabirds (black-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no |

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| | | adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Tips of Corsemaul and Tom Mor SPA | 61 km | Site was screened in for its seabird species, common gull. which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Troup, Pennan and Lion`s Heads SPA | 12 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary and Meikle Loch Ramsar | 13 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose (*Anser brachyrhynchus*) which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose if OHL is required, although standard mitigation** |



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| | | | **measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 9 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose and lapwing which the site is designated for have a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and lapwing if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_NE7_to_Peterhead DCSS | Buchan Ness to Collieston Coast SPA | 3 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Fowlsheugh SPA | 62 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried |

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| | | | underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Loch of Strathbeg Ramsar/SPA | 6 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose and barnacle goose which the site is designated for have foraging range of 15-20 km and 15-25 km respectively from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and barnacle goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Moray Firth SPA | 50 km | Site was screened in for its seabirds (red-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Tips of Corsemaul and Tom Mor SPA | 63 km | Site was screened in for its seabird species, common gull. which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |

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| | Troup, Pennan and Lion`s Heads SPA | 22 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary and Meikle Loch Ramsar | 13 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 9 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose and lapwing which the site is designated for have a foraging range of 15-20 km from the SPA / Ramsar. The sea bird |

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| | | | assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and lapwing if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_NE8_to_Peterhead 1 | Buchan Ness to Collieston Coast SPA | Within the HNDFUE Corridor | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Caithness and Sutherland Peatlands SPA | 95 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Copinsay SPA | 93 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard** |

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| | | | **mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | East Caithness Cliffs SPA | 88 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Fowlsheugh SPA | 60 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Loch of Strathbeg SPA/Ramsar | Within the HNDFUE Corridor | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, pink-footed goose and barnacle goose which the site is designated for have foraging range of 15-20 km and 15-25 km respectively from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect |

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| | | on integrity if the cable is buried underground. **Potential adverse effect on waterbirds if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Moray Firth SPA | 44 km | Site was screened in for its seabirds (red-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Muir of Dinnet SPA/Ramsar | 71 km | Site was screened in for its seabirds (great northern diver, red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | North Caithness Cliffs SPA | 95 km | Site was screened in for specified seabird species (razorbill, puffin, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Pentland Firth Islands SPA | 97 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a |

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| | | section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Scapa Flow SPA | 99 km | Site was screened in for its seabirds (black-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | Tips of Corsemaul and Tom Mor SPA | 59 km | Site was screened in for its seabird species, common gull. which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Troup, Pennan and Lion`s Heads SPA | 12 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary and Meikle Loch Ramsar | 13 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will |

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| | | | generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary, Sands of Forvie and Meikle Loch SPA | 5 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose and lapwing which the site is designated for have a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and lapwing if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| SW_E1c_1_to_SW_E1c_2 | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| Aspen_to_Beech | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| Aspen_to_Fetteresso | Montrose Basin SPA/Ramsar | 2 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a |

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| | | potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose and greylag goose which the site is designated for have a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose and greylag goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Fowlsheugh SPA | 3 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Loch Leven SPA | 80 km | Site was screened in for the seabird assemblage (great cormorant) that have a foraging range of 35 km. Cormorant will feed in the water. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due this species feeding within the water and the fact that the orientation of the landfall to the SPA means SPA birds will not need to traverse the landfall to forage in the sea. |
| Loch of Skene SPA/Ramsar | 19 km | Site was screened in for its waterbids. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, |

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| | | however, greylag goose which the site is designated for have a foraging range of 15-20 km from the SPA / Ramsar. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on greylag goose if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Outer Firth of Forth and St Andrews Bay Complex SPA | 20 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull, common gull, little gull and black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Ythan Estuary, Sands of Forvie and Meikle Loch SPA/Ramsar | 22 km | Site was screened in for its seabirds (little tern, common tern, sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Buchan Ness to Collieston Coast SPA | 29 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site** |

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| | | **is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Loch of Strathbeg SPA/Ramsar | 45 km | Site was screened in for its seabirds (sandwich tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Forth Islands SPA | 46 km | Site was screened in for the seabird assemblage (lesser black-backed gull) that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required due to lesser black-backed gulls coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Tips of Corsemaul and Tom Mor SPA | 64 km | Site was screened in for its seabird species, common gull. which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Troup, Pennan and Lion`s Heads SPA | 65 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site** |

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| | | | **is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Moray Firth SPA | 82 km | Site was screened in for its seabirds (red-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| | St Abb`s Head to Fast Castle SPA | 87 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Imperial Dock Lock, Leith SPA | 95 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Beech_to_BeechMPI | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| Beech_to_Cedar | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This |

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| | | | corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| Cedar_to_Aspen | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| Cedar_to_Branxton | St Abb`s Head to Fast Castle SPA | 4 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Firth of Forth SPA/Ramsar (Includes compensation area Kennet Pans) | 6 km | Site was screened in for its water birds and seabirds. The species of seabird for which the site is designated (common tern, red-throated diver) have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. Pink-footed goose has a foraging range of 15-20 km and this included the corridor. Golden plover have a maximum range of 11 km and tis includes the corridor. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the named species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Forth Islands SPA | 14 km | Site was screened in for the seabird assemblage (lesser black-backed gull) that have a foraging range of 236 km. Gulls will generally forage in coastal areas and inland despite being sea birds. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential** |

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| | | **adverse effect on the integrity of the site if OHL is required due to lesser black-backed gulls coming inland to feed, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Northumberland Marine SPA (Including compensation area Alnmouth 2) | 20 km | Site was screened in for its sea bird assemblage: Atlantic puffin, little tern, roseate tern, common tern, Arctic tern, sandwich tern, and common guillemot. The sea birds the site is designated for feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. Potential adverse effect on the integrity of the site is unlikely if OHL is required due to these seabirds not foraging inland. |
| Northumbria Coast SPA/Ramsar | 21 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of 100 km (or more) which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds not coming inland. |
| Lindisfarne SPA/Ramsar | 22 km | Site was screened in for its seabird species. The species of seabird for which the site is designated (little tern and roseate tern) have a potential foraging range of 100 km or more which includes the corridor. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to the birds feeding out at sea. |
| Farne Islands SPA | 27 km | Site was screened in for tern species and guillemot and for a seabird assemblage which have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser** |

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| | | **black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Imperial Dock Lock, Leith SPA | 45 km | Site was screened in for its seabirds (common tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| | Loch Leven SPA | 60 km | Site was screened in for the seabird assemblage (great cormorant) that have a foraging range of 35 km. Cormorant will feed in the water. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due this species feeding within the water and the fact that the orientation of the landfall to the SPA means SPA birds will not need to traverse the landfall to forage in the sea. |
| | Coquet Island SPA | 61 km | Site was screened in for its tern species and seabird assemblage which the site is designated for have a potential foraging range of 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Fowlsheugh SPA | 96 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried |

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| | | | underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| NorthConnect_to_Centos | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| Peterhead_to_Cenos | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |
| Scaraben_to_Peterhead2 | Buchan Ness to Collieston Coast SPA | 5 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| | Ythan Estuary and Meikle Loch Ramsar | 13 km | Site was screened in for its seabirds, waterfowl and wader species. The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. Waders can feed around the intertidal zone as well as estuaries and inland wetland areas. According to guidance from Natural England on Impact Risk Zones, most species of waterfowl and waders will generally stay within 2 km of the SPA / Ramsar, however, pink-footed goose which the site is designated for has a foraging range of 15-20 km from the SPA / Ramsar. The sea bird assemblage feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on pink-footed goose if OHL** |

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| | | **is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Troup, Pennan and Lion`s Heads SPA | 14 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Caithness and Sutherland Peatlands SPA | 43 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Moray Firth SPA | 46 km | Site was screened in for its seabirds (red-throated diver and great northern diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| North Caithness Cliffs SPA | 50 km | Site was screened in for specified seabird species (razorbill, puffin, fulmar, black-legged kittiwake and guillemot) and for a seabird assemblage all of which have a potential foraging range of over 100 km which includes the corridor. The seabird assemblage may include gull species which will come inland to feed. It is currently unknown if there will be a section of onshore cable included in the |

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| | | corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site if OHL is required as herring gull and lesser black-backed gull may feed inland, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Caithness Lochs SPA/Ramsar | 55 km | Site was screened in for its seabirds (red-throated diver and black-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Fowlsheugh SPA | 58 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of the herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Tips of Corsemaul and Tom Mor SPA | 63 km | Site was screened in for its seabird species, common gull. which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Muir of Dinnet SPA | 73 km | Site was screened in for its seabirds (great northern diver, red-throated diver). The species of seabird for which the site is designated have a potential foraging range of 100 km which |

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| | | includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| East Caithness Cliffs SPA | 83 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of herring gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Pentland Firth Islands SPA | 84 km | Site was screened in for its seabirds (Arctic tern). The species of seabird for which the site is designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea. |
| Copinsay SPA | 91 km | Site was screened in for its seabird species. The species of seabird for which the site is designated have a potential foraging range of over 100 km which includes the corridor. The sea bird assemblage feed out at sea and not inland, with the exception of great black-headed gull which will forage inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. No adverse effect on integrity if the cable is buried underground. **Potential adverse effect on the integrity of the site is for the gull species if OHL is required, although standard mitigation measures are available such as deflectors and careful design of the OHL and pylons.** |
| Scapa Flow SPA | 94 km | Site was screened in for its seabirds (black-throated diver and great northern diver). The species of seabird for which the site is |

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| | | | designated have a potential foraging range of 100 km which includes the corridor. These sea birds feed out at sea and not inland. It is currently unknown if there will be a section of onshore cable included in the corridor after the landfall point. However, no adverse effect on the integrity of the site will arise if OHL is required due to these birds feeding out at sea |
| Scaraben_to_Sinclair | - | - | This corridor is solely marine based; therefore, there will be no terrestrial OHL as all of the cabling will be submerged or buried. This corridor will have no adverse effect on the integrity of any sites designated for birds (sea birds, waterfowl, or waders). |

# Temporary or permanent loss or removal of terrestrial and intertidal habitats

Study corridors can result in temporary disturbance of terrestrial habitats at the landfall and in any onshore elements of the scheme. If the landfall is achieved by open cut trenching, then this land take can consist of direct removal of habitat. While the ground is restored after cable burial, differences in substrate consolidation and hydrology compared to its pre-disturbance state can mean the corridor footprint remains visible even after restoration due to a difference in botanical structure or composition.

Study corridors can result in permanent loss of terrestrial habitats at the landfall and in any onshore elements of the scheme. Whether landfall is achieved by trenchless techniques or direct burial there will need to be kiosks at cable joint bays to enable subsequent monitoring of the buried cable. These are typically small, amounting to approximately 1 $m^2$, but there normally need to be several and if located within a European site boundary could constitute land take from SAC features or features important for supporting the SPA interest. If the onwards continuation of the cable route is accomplished through OHL, then the pylons will result in land take from the concrete foundations.

Even if the landfall is accomplished by trenchless methods such as HDD there will still be some onshore land take during construction in the form of a receiving or launch pit (depending on whether the HDD is driven from land or from the marine environment). These HDD installation sites can be over one hectare in area. HDD can also potentially affect the habitats which overlie the drill route if there is an effect on the hydrology of the overlying habitat (for example by creating new drainage pathways) or if the drill cavity collapses. There can also be contamination of surface substrates if there is a leak of drilling fluid. The necessary geotechnical investigation to inform HDD design can it itself by extensive and result in adverse effects on the integrity of European sites. There are methods available to enable construction without necessarily affecting the aquifers significantly, depending on factors such as precise location of the cable route, depth of construction, whether HDD or trench dewatering are required, and overlying geology, However, further investigation would be required at a project (planning application) level before a conclusion of no adverse effect on integrity can be drawn.

The onwards continuation of the scheme following landfall can also result in direct construction-period impacts on terrestrial habitats if the continuation is achieved by buried cable installed by open cut excavations and associated construction compounds. Even if accomplished by overhead line (although the base assumption for HND is that connection to the substation will be by buried cable) there would still be land take from construction compounds. The corridors subject to this HRA stop at the interface with onshore infrastructure in the form of an existing or new substation. There may also be a need for a

new substation or a converter station. The onshore technology and routes beyond the substation are to be determined at a later stage by the Transmission Operators.

Terrestrial (i.e. landwards of the line of mean high water) land take from sites will only arise if the cable route actually traverses the European site in question. The 5 km wide corridors in the Table below overlap with one or more European sites at their landfall. However, the actual cable routes are likely to be much narrower (e.g. 40 m or less) and therefore the fact that a corridor overlaps with a European site at its landfall does not mean that the study corridor will be located in the European site. In some cases, sites overlap with the 5 km corridor but in practice it would not make sense for a landfall to be attempted within the site. For example, Durham Coast SAC overlaps with the landfall for corridor SW_E1a_to_Hawthorn Pit; however, in practice Durham Coast SAC is a cliff top and cliff-face site that would never be chosen for a landfall. The assessment is provided in **Table 22.**

## Mitigation

In general, when undertaking detailed design for the purposes of planning application and Development Consent Order landfalls should avoid European site boundaries and only occur within site boundaries if it can be shown that other options will not deliver the objectives of the project. If landfall will occur within a site, this and the corridor continuation within the European site, should be undertaken using trenchless techniques such as HDD, with the compounds and HDD pits located outside the site boundary and/or the intertidal zone. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. If landfall will occur within a site, the surface permanent infrastructure should be located outside the site boundary unless it can be situated within 'site fabric'.

**It can be seen from Table 22 that one corridor is considered not to be able to avoid adverse effects on the integrity of a European site and will therefore require derogations based on available information. This is SW_N4_to_Arnish_(Lewis) which cannot avoid adverse effects on Lewis Peatlands SPA either due to direct habitat loss or indirect habitat loss through impacts on hydrology.**

## Table 22: Temporary or permanent loss or removal of terrestrial habitats

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Ballantrae_to_Pentir | Afon Gwyrfai a Llyn Cwellyn SAC | Within the HND corridor | The SAC is a river which flows across the entire corridor. It is very unlikely that open cut crossing would be possible without an adverse effect on the integrity of the SAC. However, trenchless techniques would enable the SAC to be traversed without an adverse effect on integrity via temporary or permanent habitat loss. |
| | Lendalfoot Hills Complex SAC | Within the HND corridor | The eastern end of the onshore part of the corridor overlaps to a small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Mull of Galloway SAC | Within the HND corridor | The marine part of corridor slightly overlaps with this SAC but since the vast majority of the corridor lies outside this site and the cable route will only be tens of metres wide, adverse effects on integrity will be easily avoided by careful alignment within the corridor. |
| | Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC | Within the HND corridor | The northern side of the onshore part of the corridor overlaps to a small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Y Twyni o Abermenai i Aberffraw/Abermenai to Aberffraw Dunes SAC | Within the HND corridor | The southern side of the onshore part of the corridor overlaps to a small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
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| | | | enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. In consultation over this HRA report Natural Resources Wales identified that even if the study corridor does not overlap with the SAC depending on proximity to the SAC, and construction method, it is possible that impacts on the underlying aquifer could affect the hydrology of the humid dune slacks and dunes with creeping willow within the SAC. There are methods available to enable construction without necessarily affecting the aquifers significantly, depending on factors such as precise location of the cable route, depth of construction, whether HDD or trench dewatering are required, and overlying geology, However, further investigation would be required at a project (planning application) level before a conclusion of no adverse effect on integrity can be drawn. |
| PA_2_ to_Berwick_Bank | Berwickshire and North Northumberland Coast SAC | Within the HND corridor | The marine part of the corridor overlaps with this SAC in the marine zone approximately 7 km offshore at the closest, but the landfall does not do so. Therefore, there will be no terrestrial land take from the SAC. |
| | Northumbria Coast SPA/Ramsar | Within HND corridor | The southern side of the corridor as it transitions to the terrestrial element traverses the SPA. Northumbria Coast SPA/Ramsar is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the SPA is entirely avoided when bringing the cable route to landfall, or by ensuring the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
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| | | | techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| | Northumberland Marine SPA (Including compensation area Alnmouth 2) | Within HND corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Northumberland Marine SPA is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| R4_3_to_Weston_Marsh | Inner Dowsing, Race and North Ridge | Within the HND corridor | The marine part of the corridor overlaps with this SAC in the marine zone approximately 7 km offshore at the closest, but the landfall does not do so. Therefore, there will be no terrestrial land take from the SAC. |
| | Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC | 100m from the HND corridor | The southern side of the onshore part of the corridor lies within 100 m of the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | The Wash and North Norfolk Coast SAC | Within the HND corridor | The marine part of corridor slightly overlaps with this SAC but since the vast majority of the corridor lies outside this site and the cable route will only be tens of metres wide, adverse effects on integrity will be easily avoided by careful alignment within the corridor. |
| | The Wash SPA/Ramsar | Within HNDFUE corridor | The southern side of the onshore part of the corridor overlaps to a very small extent with the SAC. However, the 5 km wide |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
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| | | | corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Greater Wash SPA | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Greater Wash SPA is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| SW_E1a_to_Hawthorn Pit | Durham Coast SAC | Within the HND corridor | The southern part of the onshore part of the corridor overlaps to a very small extent with the SAC. However, this site is designated for vegetated sea cliffs which are unlikely to be suitable for landfall. the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Northumbria Coast SPA | Within HNDFUE corridor | A very small part of the onshore section of corridor overlaps to a small extent with the SPA. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent landtake effect on the SPA can be avoided. |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
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| SW_NE7_ To_Peterhead | Buchan Ness to Collieston Coast SAC | Within the HND corridor | The southern part of the onshore part of the corridor overlaps to a very small extent with the SAC. However, this site is designated for vegetated sea cliffs which are unlikely to be suitable for landfall. the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Buchan Ness to Collieston Coast SPA | Within the HND corridor | The southern portion of this corridor intersects with the SPA. The SPA is primarily a marine site although the cliffs at landfall are included in the designation and are of particular importance for some of the breeding species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs to the north of the corridor. |
| Kilmarnock_South_to_Ballantrae | Lendalfoot Hills Complex SAC | Within the HND corridor | The land fall for this corridor coincides with the landfall for the Ballantrae to Pentir corridor. The eastern end of onshore part of the corridor overlaps to a small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| SW_N4_to_Arnish_(Lewis) | Lewis Peatlands SAC | Within the HND corridor | The corridor overlaps with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide and there is a route through the centre of the corridor where the cable can be laid without impinging on the SAC. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. The ends of the corridor lie |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
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| | | | outside the SAC such that any new substation or converter station required could avoid impacts. |
| SW_N4_to_Arnish_(Lewis) | Lewis Peatlands SPA/Ramsar | Within the HND corridor | The SPA/Ramsar is crossed by the entire corridor as it crosses the Island of Lewis. The SPA/Ramsar are designated for seabirds, birds of prey, waders and habitats including blanket bog, oligotrophic lochs, dysotrophic lochs and wet heath. Trenchless techniques could potentially be used but it is very unlikely that the entire 10 km crossing of the SPA could be undertaken using trenchless methods. Moreover, there would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate or effects on hydrology of the sensitive wetlands e.g. by drilling through underlying bedrock Even overhead powerlines would require buried bases that would involve direct landtake from the SPA. **Therefore, it is considered adverse effects on integrity due to direct habitat loss (or indirect loss due to effects on surface hydrology) cannot be dismissed and the derogation tests would be required.** |
| R4_4_to_Bodelwyddan | Coedwigoedd Dyffryn Elwy/ Elwy Valley Woods SAC | Within the HND corridor | The southern side of the onshore part of the corridor overlaps to a very small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Liverpool Bay SPA | Within HNDFUE corridor | The marine part of the corridor overlaps with this SPA, but the landfall does not do so. Therefore, there will be no terrestrial landtake from the SPA. |
| R4_5_to_Penwortham | Ribble & Alt Estuaries SPA/Ramsar | Within HNDFUE corridor | The onshore 5 km wide corridor does overlap with the SPA/Ramsar at its southern extent, but there is an extensive area in the north of the corridor that would enable the |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
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| | | | SPA/Ramsar to be avoided entirely, which would be possible given the actual cable route is likely to be tens of metres wide. Even if the SPA/Ramsar were to be traversed, an adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| | Liverpool Bay SPA | Within HNDFUE corridor | The marine part of the corridor overlaps with this SPA in the marine zone approximately 7, but the SPA has no landfall within the corridor. Therefore, there will be no terrestrial or intertidal landtake from the SPA. |
| R4_6_to_Penwortham | Ribble & Alt Estuaries SPA/Ramsar (Includes compensation area Hesketh Out Marsh West) | Within HNDFUE corridor | The onshore 5 km wide corridor does overlap with the SPA at its southern extent, but there is an extensive area in the north of the corridor that would enable the SAC to be avoided entirely, which would be possible given the actual cable route is likely to be tens of metres wide. Even if the SPA were to be traversed, an adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| | Liverpool Bay SPA | Within HNDFUE corridor | The marine part of the corridor overlaps with this SPA in the marine zone approximately 7, but the SPA has no landfall within the corridor. Therefore, there will be no terrestrial or intertidal landtake from the SPA. |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
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| SW_N1_to_Spittal | North Caithness Cliffs SPA | Within the HND corridor | The eastern side of the corridor as it transitions to landfall overlaps with the SPA. The SPA is primarily a marine site although the cliffs are included in the designation. The cliffs are unlikely to be a suitable point for landfall so provided that landfall is made on the western side of the corridor outside the SPA any temporary or permanent land take effect on the SPA can be avoided. |
| | River Thurso SAC | Within the HND corridor | The SAC is a river which flows across the entire corridor. It is very unlikely that open cut crossing would be possible without an adverse effect on the integrity of the SAC. However, trenchless techniques would enable the SAC to be traversed without an adverse effect on integrity via temporary or permanent habitat loss. |
| R4_1_to_Birkhill Wood | Greater Wash SPA | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Greater Wash SPA is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| R4_2_to_Birkhill Wood | Greater Wash SPA | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Greater Wash SPA is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| PA_1_to_Birkhill Wood | Greater Wash SPA | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Greater Wash SPA is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| SW_E1a_to_lincs_CN | Greater Wash SPA | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Greater Wash SPA is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| Shetland_to_Blackhillock | Lower River Spey – Spey Bay SAC | Within the HNDFUE corridor | The western side of the onshore part of the corridor overlaps to a very small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Moray and Nairn Coast Ramsar | Within the HNDFUE corridor | The western side of the onshore part of the corridor overlaps to a very small extent with the Ramsar site. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the Ramsar site can be avoided. |
| SW_E1a_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the INTOG corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. However, the SPA is entirely marine so no terrestrial habitat loss within the SPA would arise. Therefore, no adverse effect on integrity would arise. |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | Within the HNDFUE corridor | The southern side of the onshore part of the corridor overlaps to a very small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Greater Wash SPA | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Greater Wash SPA is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_E1c_1_to_Lincs_CN | Greater Wash SPA | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Greater Wash SPA is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| SW_E2a_2_to_Near Richborough | Sandwich Bay SAC | Within the HNDFUE corridor | The southern side of the onshore part of the corridor overlaps to a large extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Thanet Coast and Sandwich Bay SPA/ Ramsar | Within HNDFUE corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. Thanet Coast and Sandwich Bay SPA/ Ramsar is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_N2_to_Near_Dounreay | Caithness and Sutherland Peatlands SAC/Ramsar | Within the HNDFUE corridor | The western side of the onshore part of the corridor overlaps to a very small extent with the Ramsar site. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the Ramsar site can be avoided. |
| | North Caithness Cliffs SPA | Within the HNDFUE corridor | The western side of the corridor as it transitions to landfall overlaps with the SPA. The SPA is primarily a marine site although the cliffs are included in the designation. The cliffs are unlikely to be a suitable point for landfall so provided that landfall is made on the eastern side of the corridor and outside the SPA, any temporary or permanent land take effect on the SPA can be avoided. |
| SW_N3_to_Arnish | Lewis Peatlands SAC/Ramsar | Within the HNDFUE corridor | The northern edge of the onshore part of the corridor overlaps to a very small extent with the SAC/Ramsar site. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the Ramsar site can be avoided. |
| SW_NE2_to_Spittal | Caithness and Sutherland Peatlands SAC/SPA/Ramsar | Within the HNDFUE corridor | The corridor overlaps to a very small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Caithness Lochs SPA/Ramsar | Within the HNDFUE corridor | The corridor overlaps to a very small extent with the SPA/Ramsar. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | that any temporary or permanent land take effect on the SPA/Ramsar can be avoided. |
| | Loch of Wester SAC | Within the HNDFUE corridor | The corridor overlaps to a very small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Loch Watten SAC | Within the HNDFUE corridor | The corridor overlaps to a very small extent with the SAC. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| SW_NE6_to_Peterhead 2 | Loch of Strathbeg SPA/Ramsar | Within the INTOG corridor | Part of the southern half of the corridor intersects with the SPA. The corridor is wide enough to ensure that any temporary or permanent land take effect on the SPA/Ramsar can be avoided. |
| SW_NE8_to_Peterhead 1 | Loch of Strathbeg SPA/Ramsar | Within the INTOG corridor | Part of the southern half of the corridor intersects with the SPA. The corridor is wide enough to ensure that any temporary or permanent land take effect on the SPA/Ramsar can be avoided. |
| Cedar_to_Branxton | Outer Firth of Forth and St Andrews Bay Complex SPA | Within the INTOG corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. However, the SPA is entirely marine so no terrestrial habitat loss within the SPA would arise. Therefore, no adverse effect on integrity would arise. |
| Peterhead_to_Cenos | Buchan Ness to Collieston Coast SAC | Within the INTOG corridor | The southern part of the onshore part of the corridor overlaps to a very small extent with the SAC. However, this site is designated for vegetated sea cliffs which are unlikely to be suitable for landfall. the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Buchan Ness to Collieston Coast SPA | Within the INTOG corridor | The entire corridor as it transitions to the terrestrial element traverses the SPA. The SPA is primarily a marine site although the intertidal zone is included in the designation for the majority of the landfall and is of particular importance for some of the species for which the SPA is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs landwards of the SPA boundary, and by ensuring that the intertidal area is traversed using trenchless techniques. There would need to be a geotechnical investigation regarding the use of trenchless techniques to ensure that it can be installed without any risk of collapse of the surface substrate. |
| Scaraben_to_Peterhead 2 | Loch of Strathebeg SPA/Ramsar | Within the INTOG corridor | The corridor overlaps to some extent with the SPA/Ramsar. However, the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SPA/Ramsar can be avoided. |
| PDA1_to_Llandyfaelog | Carmarthen Bay Dunes/Twyni Bae Caerfyrddin SAC | Within the Celtic Sea corridor | The northern part of the onshore corridor overlaps to a relatively small extent with the SAC. The 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. In consultation over this HRA report Natural Resources Wales identified that even if the study corridor does not overlap with the SAC depending on proximity to the SAC, and construction method, it is possible that impacts on the underlying aquifer could affect the hydrology of the humid dune slacks and dunes with creeping willow within the SAC. |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | There are methods available to enable construction without necessarily affecting the aquifers significantly, depending on factors such as precise location of the cable route, depth of construction, whether HDD or trench dewatering are required, and overlying geology, However, further investigation would be required at a project (planning application) level before a conclusion of no adverse effect on integrity can be drawn. |
| | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | The entire corridor passes through the SAC at landfall. It is very unlikely that open cut crossing would be possible without an adverse effect on the integrity of the onshore element of the SAC. However, trenchless techniques would enable the SAC to be traversed without an adverse effect on integrity via temporary or permanent habitat loss. |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | The marine part of corridor slightly overlaps with this SAC but since the vast majority of the corridor lies outside this site and the cable route will only be tens of metres wide, adverse effects on integrity will be easily avoided by careful alignment within the corridor. |
| | Bury Inlet SPA/Ramsar | Within the Celtic Sea corridor | A very small section of the eastern edge of the corridor as it transitions to the terrestrial element coincides with the SPA/Ramsar. The SPA/Ramsar is primarily a marine site although the intertidal zone is included in the designation and is of particular importance for some of the species for which the SPA/Ramsar is designated. An adverse effect on integrity through temporary or permanent loss can be avoided by ensuring landfall occurs to the west of the SPA/Ramsar boundary. |
| PDA2_to_South_Wales_Connection_Node | Kenfig/Cynffig SAC | Within the Celtic Sea corridor | The southern part of the onshore part of the corridor overlaps to a small extent with the SAC. The 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | that any temporary or permanent land take effect on the SAC can be avoided. In consultation over this HRA report Natural Resources Wales identified that even if the study corridor does not overlap with the SAC depending on proximity to the SAC, and construction method, it is possible that impacts on the underlying aquifer could affect the hydrology of the humid dune slacks and dunes with creeping willow within the SAC. There are methods available to enable construction without necessarily affecting the aquifers significantly, depending on factors such as precise location of the cable route, depth of construction, whether HDD or trench dewatering are required, and overlying geology, However, further investigation would be required at a project (planning application) level before a conclusion of no adverse effect on integrity can be drawn. |
| | Glaswelltiroedd Cefn Cribwr/Cefn Cribwr Grasslands SAC | Within the Celtic Sea corridor | The southern part of the onshore part of the corridor overlaps to a very small extent with the SAC. The 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| PDA3_to_Pyworthy | Culm Grasslands SAC | Within the Celtic Sea corridor | The onshore part of the corridor overlaps to a very small extent with the SAC. the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any temporary or permanent land take effect on the SAC can be avoided. |
| | Tintagel-Marsland-Clovelly Coast SAC | Within the Celtic Sea corridor | The western part of the onshore part of the corridor overlaps to a small extent with the SAC. However, this site is designated for vegetated sea cliffs which are unlikely to be suitable for landfall. the 5 km wide corridor is far larger than the actual cable route which is likely to be tens of metres wide. The corridor is therefore wide enough to ensure that any |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | temporary or permanent land take effect on the SAC can be avoided. |

# Terrestrial functionally linked habitat impacts

In addition to habitat within a site, habitat located outside the site but of functional importance for highly mobile species such as waterfowl and waders, bats or otter may also be affected.

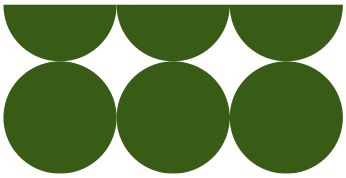
While most sites have been geographically defined in order to encompass the key features that are necessary for coherence of their structure and function, this is not the case for all such sites. Due to the highly mobile nature of waterfowl and bats, it is inevitable that areas of habitat of crucial importance to the maintenance of their populations are outside the physical limits of the European site for which they are an interest feature. However, this area will still be essential for maintenance of the structure and function of the interest feature for which the site was designated, and land use plans that may affect this land should still therefore be subject to further assessment. This has been underlined by European Court of Justice ruling C-461/17 (known as the Holohan ruling[15]) which in paragraphs 37 to 40 confirms the need for an appropriate assessment to consider the implications of a plan or project on habitats and species outside the site boundary, provided that those implications are liable to affect the conservation objectives of the site.

## Bat Sites

For many bat SACs, issues relating to loss of habitat, disturbance to and deteriorating habitats has been identified as a potential threat to the SAC and its qualifying bat species. The qualifying bat species use functionally linked land surrounding to forage, commute and use for seasonal migration into the wider countryside. The area of greatest bat activity surrounding a roost is defined as the Core Sustenance Zone (CSZ) (BCT, 2020). This term refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost. The largest CSZ is generally that for greater horseshoe bat. This bat species uses commuting corridors along linear landscape features and forages in permanent pasture and woodland. The Bat Conservation Trust identifies a weighted average CSZ of 3 km for greater horseshoe bats (Schofield, 2008) based on weighted averages from four studies. However, confidence in this zone size is described in the guidance as 'Moderate' because the calculation is based on a reasonable sample size from multiple colonies and studies but is rounded down from weighted average.

Other radio-tracking research on greater horseshoe bats has shown that they make longer foraging trips foraging from their roost sites than lesser horseshoe bats, up to 9-10 km from their roost (Billington, 2008, & 2009) and the West of England LTP4 HRA cites studies (Billington, 2003) that identify that greater horseshoe bats have been shown to have a maximum home range of up to 8 km from a roost. As such, areas within this distance could

[15] The Holohan ruling also requires all the interest features of the sites discussed to be catalogued (i.e. listed) in the HRA. That is the purpose of **Appendix B**.



have potential as functionally linked land. As a rule of thumb, functionally linked land is usually considered significant where the parcel of land is considered part of a critical flyway or foraging area for the SAC designated species (Natural England, 2016). The size of development likely to have adverse effects on the SAC will vary depending on their proximity to sensitive habitats and the scale of impact they are likely to have. A small development in a sensitive location may have greater impact than a much larger one a long distance from sensitive habitats. As a general rule, any loss or damage of open water, riparian, deciduous woodland, unimproved grassland and mosaics of these habitats should not be permitted unless there are sufficient offsetting measures incorporated into the plan or project to fully mitigate such losses.

### Otter

Otter (*Lutra lutra*) has a foraging range of 20 km. However, according to Vincent Wildlife Trust (Vincent Wildlife Trust, 2024), the territories of otters can stretch for several kilometres; the total length of the home range depends on the availability of food. The smallest territories are thought to occur at coastal sites, where territories may be as small as 2 km. This is relevant to the current HRA because although the maximum 20 km zone was used for the screening (LSE) exercise, the landfalls are all in coastal environments. This smaller 2 km distance is therefore used in this appropriate assessment.

### Great crested newt

Great crested newts often depend on habitat up to 500 m from their breeding ponds to forage, and to over-winter. While great crested newts can travel further than 500 m, the 500 m distance is commonly used, for example in European protected species licensing; a licence is not generally required for works more than 500 m from suitable breeding ponds even if the over wintering habitat is suitable for the species. No corridors are located within 500 m of any sites designated for great crested newts.

### Avian Sites

In general, for avian sites, Natural England IRZs for each SSSI and guidance that underlies those zones will be utilised (Natural England, 2019). This identifies the typical distances that wintering waterfowl will travel from their SPAs to forage. Relevant IRZs are identified as outlined in **Table 23.** The assessment is presented in **Table 24.**

## Table 23: Natural England and NatureScot Impact Risk Zones for designated bird features (not including seabirds)

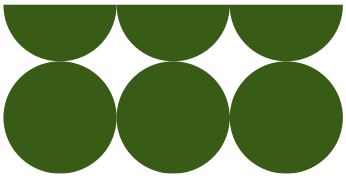
| Assemblage / Species | Source | Impact Risk Zone (foraging distance) |
|---|---|---|
| Wintering birds (except wintering waders and grazing wildfowl; wigeon and geese) | Natural England | Up to 500 m |
| Dabbling ducks such as teal, mallard and gadwall | Natural England | Home ranges could extend beyond site boundaries at coastal sites, but less likely to do so at inland water bodies. |
| Wintering waders (except golden plover and lapwing), brent goose & wigeon (and breeding nightjar) | Natural England | Maximum foraging distance is 2 km |
| Wintering lapwing and golden plover | Natural England | Maximum foraging distance is 15-20 km. |

| Assemblage / Species | Source | Impact Risk Zone (foraging distance) |
|---|---|---|
| | | Golden plover can forage up to 15 km from a roost site within a protected site. Lapwing can also forage similar distances. Both species use lowland farmland in winter, and it is difficult to distinguish between designated populations and those present within the wider environment.<br>Developments affecting functionally linked land more than 10 km from the site are unlikely to impact significantly on designated populations. |
| Wintering white-fronted goose, hocoeng goose, Bewick's swan, whooper swan & wintering bean goose | Natural England | Maximum foraging distance is 10 km.<br>A bespoke functional land IRZ has replaced the individual Birds 6/7 IRZs for sites supporting the following goose and swan species: pink-footed geese, barnacle goose, Bewick's swan, white-fronted goose and whooper swan.<br>The IRZ is based on GIS distribution records of feeding pink-footed geese from a study undertaken for Natural England by the Wildfowl & Wetlands Trust and the results of work undertaken by the British Trust for Ornithology to identify functionally connected habitat used by barnacle goose, Bewick's swan, white-fronted goose and whooper swan based on WeBS site and BirdTrack data and focuses on only the areas of land that we know are being used as functional habitat by designated populations |
| Wintering pink footed goose, barnacle goose | Natural England | Maximum foraging distance is 15-20 km.<br>A bespoke functional land IRZ has replaced the individual Birds 6/7 IRZs for sites supporting the following goose and swan species: pink-footed geese, barnacle goose, Bewick's swan, white-fronted goose and whooper swan.<br>The IRZ is based on GIS distribution records of feeding pink-footed geese from a study undertaken for Natural England by the Wildfowl & Wetlands Trust and the results of work undertaken by the British Trust for Ornithology to identify functionally connected habitat used by barnacle goose, Bewick's swan, white-fronted goose and whooper swan based on WeBS site and BirdTrack data and focuses on only the areas of land that we know are being used as functional habitat by designated populations |
| **Red-throated diver (during breeding season)** | NatureScot | Generally, less than 8 km, but regular flights of 11-13.5 km recorded on Western Isles. |

| Assemblage / Species | Source | Impact Risk Zone (foraging distance) |
|---|---|---|
| **Black-throated diver (during breeding season)** | NatureScot | Likely to be less than 10 km |
| **Red kite (during breeding season)** | NatureScot | Core range of 4 km, with maximum range of up to 6 km |
| **Hen harrier (during breeding season)** | NatureScot | Core range of 2 km, with maximum range of 10 km |
| **Goshawk (during breeding season)** | NatureScot | Core range of 3 km, with maximum range generally less than 10 km, and maximum recorded distance of 18 km. |
| **Golden eagle (during breeding season)** | NatureScot | Core range of 6 km, with maximum range of up to 9 km |
| **Osprey (during breeding season)** | NatureScot | Core range of 10 km with some regular foraging up to 20 km, and maximum recorded distance of 28 km. |
| **Merlin (during breeding season)** | NatureScot | Within 5 km. |
| **Peregrine (during breeding season)** | NatureScot | Core range of 2 km with maximum recorded distance in Britain of 18 km |
| **White-tailed eagle (during breeding season)** | NatureScot | Core range of 5 km, with maximum range of 13 km. |
| **Short-eared owl (during breeding season)** | NatureScot | Core range of 2 m, with maximum range of 5 km |
| **Black grouse (during breeding season)** | NatureScot | Within 2 km, with male core ranges of up to 1.5 km and female core ranges of approximately 0.5 km. |
| **Golden plover (during breeding season)** | NatureScot | Core range of 3 km, with maximum range of 11 km. |
| **Greenshank (during breeding season)** | NatureScot | Core range of 2 km, with maximum range of 3 km |
| **Dunlin (during breeding season)** | NatureScot | Core range of 500m with maximum range of 3 km, |
| **Curlew (during breeding season)** | NatureScot | Core range of 1 km, with maximum range usually within 2 km |
| **Whooper swan** (during winter season) | NatureScot | Core range of less than 5 km |
| **Greylag goose** (during winter season) | NatureScot | Core range of 15-20 km |
| **Pink-footed goose** (during winter season) | NatureScot | Core range of 15-20 km |
| **Greenland white-fronted goose** (during winter season) | NatureScot | Core range of 5-8 km |
| **Barnacle goose** (during winter season) | NatureScot | Core range of 15 km, with maximum recorded distance of up to 25 km |

## Mitigation

As the schemes below are developed further for planning applications and Development Consent Orders, those identified as having potential AEoSI for otters (i.e. Corridors Ballantrae_to_Pentir, SW_N1_to_Spittal, Shetland_to_Blackhillock, SW_E1c_2_to_Weston Marsh, SW_N2_to_Near_Dounreay, SW_N3_to_Arnish and PDA1_to_Llandyfaelog) and



Corridor Ballantrae_to_Pentir for lesser horseshoe bat (*Rhinolophus hipposideros*) would need to undertake the following:

- For otters, surveys would be required for the planning application to identify their presence where suitable habitats to be affected. Where necessary to preserve such habitats, appropriate construction techniques (such as trenchless techniques for buried cables across significant watercourses) would need to be implemented. Where this was not possible or appropriate within the context of the scheme (such as with some ditches) then alternative habitat may need to be provided and steps taken to ensure no loss of connectivity for otters.

- For lesser horseshoe bats, any scheme will need to undertake bat surveys and, if lesser horseshoe bats are found, either preserve key habitats such as tree lines, roosts, and hedgerows or species-rich meadows (such as careful working practices, trenchless techniques and habitat restoration immediately following works) or offset impacts by enhancement of other areas or provision of replacement roosts (where roosts are directly affected).

Where corridors are identified as lying within the zone of influence for functionally-linked land impacts on SPA birds as set out in Natural England Impact Risk Zone guidance or other guidance such as that produced by NatureScot, the following procedures will need to be followed:

- Firstly, bird survey (typically two years') at the relevant time of year will be required of the affected area to confirm the bird use of the site;

- If the fields in question regularly support approximately 1% of the SPA population[16] or above they are classed as functionally-linked habitat. Note that this does not necessarily mean that fields supporting less than 1% of an SPA population are not functionally-linked land (e.g. for rare species such as golden plover, even land supporting less than 1% of the SPA population may be important) but the 1% threshold can provide a useful starting point;

- Where possible these fields should be avoided, particularly by permanent infrastructure; and

- If it is not possible to avoid them it will be necessary to offset the loss through the creation/enhancement of alternative habitat to ensure no overall net loss of available resource.

Measures would be included in a Construction Environment Management Plan, Register of Environmental Actions and Commitments or similar.

[16] Calculated as peak count of birds recorded >1% of the current 5-year peak mean count for birds within the relevant international site (or the 5-year peak mean at time of SPA designation if this is materially higher than the current 5-year peak mean). This applies to Qualifying Annex I birds, and also (where agreed with the statutory nature conservation body) birds from the assemblage.

## Table 24: Terrestrial functionally linked habitat impacts

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| **Bats** | | | |
| Ballantrae_to_Pentir | Glynllifon SAC | Within the HND corridor | 8 km is identified within the guidance as the maximum impact risk zone for bats. The management plan for the SAC[17] Indicates that A "sufficiently large area of suitable habitat … including continuous networks of sheltered broadleaved coniferous woodland, tree lines and hedgerows connecting the roosts with insect-rich grassland and open water. The SAC overlaps the corridor to the south which leaves potential to route the cable away from the site to minimise impact, however to the north of the corridor at this point is Afon Gwyrfai a Llyn Cwellyn SAC which provides a constraint from the other direction. Trenchless drilling techniques would avoid disruption tp the site, however open trenching would cause temporary disturbance only which could be planned at a time of year to minimise impact on bats (e.g. during the hibernation season) and construction practices such as the use of hurdles overnight could be used to maintain connectivity. **Given this it is considered possible that a scheme in this corridor may have an adverse effect on this SAC through impacts on its lesser horseshoe bat population.** However, since lesser horseshoe bat are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |

[17] Core Management Plan Including Conservation Objectives for Glynllifon SAC, Available at https://naturalresources.wales/media/672257/Glynllifon%20SAC%20Management%20Plan%2021.4.08%20English.pdf [Accessed 12/02/2025]

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| **Otters** | | | |
| Ballantrae_to_Pentir | Afon Gwyrfai a Llyn Cwellyn SAC | Within the HND corridor | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. The SAC overlaps the corridor to the north which leaves potential to route the cable away from the site to minimise impact, however to the south of the corridor at this point is Glynllifon SAC which provides a constraint from the other direction. Trenchless drilling techniques would avoid disruption to the site; however open trenching would cause temporary disturbance. **It is considered possible that a scheme in this corridor may have an adverse effect on this SAC through impacts on its otter population.** However, since otter are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| | Pen Llyn a`r Sarnau/ Lleyn Peninsula and the Sarnau SAC | 8 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| R4_3_to_Weston_Marsh | The Wash and North Norfolk Coast SAC | Within the HND corridor | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. The overlap with the SAC is less than 1 km of the corridor therefore there is sufficient space within the corridor to position the cable more than 2 km form the SAC and therefore outside of the effective range of otters in the coastal environment. Given this it is considered that although a scheme in this corridor cannot be concluded to avoid an impact. It may be possible to avoid an adverse effect on this SAC through impacts on its otter population may appropriate placement of the cable route within the corridor. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| | North Norfolk Coast SAC | 19 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| SW_E1a_to_Fiddes | River Dee SAC | 9 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| SW_N1_to_Spittal | Caithness and Sutherland Peatlands SAC | 4 km | 20 km is identified in guidance as the maximum home range of otters. This SAC is an inland site and there is a potential connecting pathway (River Thurso) which runs from the SAC and through the corridor. **Given this it is considered possible that a scheme in this corridor may have an adverse effect on this SAC through impacts on its otter population.** Since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| SW_E1a_to_Linconshire Connection Node | The Wash and North Norfolk Coast SAC | 15 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| Shetland_to_Blackhillock | River Spey SAC | Within HNDFUE corridor | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. The overlap with the SAC is less than 1 km of the corridor therefore there is sufficient space within the corridor to position the cable more than 2 km form the SAC and therefore outside of the effective range of otters in the coastal environment. Given this, it is considered that a scheme in this corridor cannot be concluded to avoid an impact. It may be possible to avoid an adverse effect on this SAC through impacts to its otter population via appropriate placement of the cable route within the corridor. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species, should surveys for the planning application identify their presence in habitats to be affected. |
| | Yell Sound Coast SAC | 9 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| SW_E1c_1_to_Lincolnshire Connection Node | The Wash and North Norfolk Coast SAC | 15 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| SW_E1c_2_to_Weston Marsh | The Wash and North Norfolk Coast SAC | Within HNDFUE corridor | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. The overlap with the SAC is less than 1 km of the corridor therefore there is sufficient space within the corridor to position the cable more than 2 km form the SAC and therefore outside of the effective range of otters in the coastal environment. Given this it is considered that a scheme in this corridor may avoid an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| SW_E3_to_Fiddes | River Dee SAC | 9 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| SW_N2_to_Near_Dounreay | Caithness and Sutherland Peatlands SAC | Within the corridor HNDFUE | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. The overlap with the SAC is less than 1 km of the corridor therefore there is sufficient space within the corridor to position the cable more than 2 km form the SAC and therefore outside of the effective range of otters in the coastal environment. Given this it is considered that a scheme in this corridor may avoid an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| | Durness SAC | 13 km | The cable is entirely within the marine environment at its closest point to this SAC and makes landfall over 50 km further east. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC. |
| | River Borgie SAC | 18 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| SW_N3_to_Arnish | Lewis Peatlands SAC | Within the corridor HNDFUE | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. The overlap with the SAC is less than 1 km of the corridor therefore there is sufficient space within the corridor to position the cable more than 2 km form the SAC and therefore outside of the effective range of otters in the coastal environment. Given this it is considered that a scheme in this corridor may avoid an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| SW_NE1a_to_Shetland | Yell Sound Coast SAC | 9 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| SW_NE1b_to_Shetland | Yell Sound Coast SAC | 9 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| SW_NE1c_to_Shetland | Yell Sound Coast SAC | 9 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| Aspen_to_Fetteresso | River Dee SAC | 6 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | on the species if surveys for the planning application identify their presence in habitats to be affected. |
| Cedar_to_Branxton | River Tweed SAC | 6 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| PDA1_to_Llandyfaelog | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | Within the Celtic Sea corridor | The full width of the corridor passes within this SAC at landfall. At its northern reach the corridor is within 1 km of the River Towy (part of the SAC) which is part of the SAC. **Given this it is considered possible that a scheme in this corridor may have an adverse effect on this SAC through impacts on its otter population.** Since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| | Pembrokeshire Marine/Sir Benfro Forol SAC | Within the Celtic Sea corridor | The cable is entirely within the marine environment when it coincides with this SAC and it makes landfall over 36 km further to the northeast. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC. |
| | Afon Tywi/River Tywi SAC | 4 km | The corridor passes within 4 km of this SAC once inland and is much closer (within 1 km) to the River Towy when it is part of the Carmarthen Bay and Estuaries/Bae |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | | | Caerfyrddin ac Aberoedd SAC which provides a clear impact pathway. **Given this it is considered possible that a scheme in this corridor may have an adverse effect on this SAC through impacts on its otter population.** Since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| | Pembrokeshire Bat Sites and Bosherston Lakes/Safleoedd Ystlum Sir Benfro a Llynnoedd Bosherston SAC | 9 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| PDA2_to_South_Wales_Connection_Node | Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC | 8 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |

| Corridor name | Site screened in for this pathway | Distance between corridor and Site | Appropriate Assessment |
|---|---|---|---|
| | Pembrokeshire Marine/Sir Benfro Forol SAC | 9 km | The cable is entirely within the marine environment at its closest point to this SAC and makes landfall over 70 km further east. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC. |
| | Pembrokeshire Bat Sites and Bosherston Lakes/Safleoedd Ystlum Sir Benfro a Llynnoedd Bosherston SAC | 20 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| PDA3_to_Pyworthy | River Camel SAC | 19 km | Although 20 km is identified in guidance as the maximum home range of otters, the same guidance indicates that the home ranges in coastal environments are much smaller, being 2 km. Given this it is considered unlikely that a scheme in this corridor will have an adverse effect on this SAC through impacts on its otter population. However, since otters are a protected species irrespective of SAC designations, measures would need to be implemented to ensure no significant adverse effect on the species if surveys for the planning application identify their presence in habitats to be affected. |
| **Great crested newts** | | | |
| No sites | | | |

The corridor-by-corridor assessment of functionally-linked habitat impacts on birds is identical to that in **Table 21** for overhead line collision risk, since that assessment is based on the likelihood of waterfowl and waders travelling from their associated SPAs through the corridor at landfall to roost or forage. That identification of distances waterfowl and waders are expected to regularly travel to and from their roosts is based on Natural England guidance on impact risk zones for functionally-linked land, as discussed earlier in this section. As such, in the interests of reducing repetition, **Table 21** is not repeated in this section.

# Maintenance activities and cable repair

Maintenance activities and cable repair where required, will be carried out using the same or similar methods as cable installation, and therefore the potential pathways for impact to the qualifying features of designated sites would be the same as those identified for the cable installation phase of each cable installation (See **Table 3** to **Table 24**).

Repair works are likely to be highly localised to the area of concern and therefore the spatial extent of any impacts would be small in extent. Furthermore, any maintenance or repairs works would be anticipated to take no more than several weeks to complete meaning the duration of impact would also be short.

The only exception is where rock protection would be required as part of maintenance and cable repair works to achieve cable reburial. In the event additional placement of rock, concrete mattresses or grout bags on the seabed be required to achieve reburial of the subsea cable, further permanent physical disturbance to benthic habitats and/or migratory fish and shellfish as qualifying features, would likely arise.

It is assumed that for each individual cable project, the marine installation corridor will be routed to avoid sensitive habitats and to achieve the precautionary target burial depths as much as possible as informed by further data acquisition at the project level. A detailed review of rock placement requirements will need undertaking at the project level for each cable route, but the need for additional cable protection as part of maintenance and cable repair works would unlikely fall beyond the estimated volumes during installation. Therefore, the overall disturbance effects to the designated sites would be anticipated to remain as reported for cable installation.

# 6. Transboundary effects

Transboundary effects



# Transboundary effects

This plan level HRA focuses on the likelihood for European Sites in English, Scottish, Welsh and Northern Irish waters to have their conservation objectives undermined by study corridors planned throughout UK waters, as part of HND. No boundaries between these countries were an influence when assessing the impact pathways associated with each study corridor.

As such transboundary effects between UK countries are accounted for as part of this assessment. Therefore, the impacts on European sites outside UK waters would be resolved by addressing the impacts in UK waters. For example, mitigation measures that apply to study corridors that may potentially affects UK European Sites will affect highly mobile and long-range foraging receptors also protected by Irish sites.

# 7. In-combination Effects

Inter-project effects

Intra-project effects



# Inter-project effects

This section considers other plans and projects that pose the potential for in-combination effects on integrity with the proposed study corridors.

This section of an HRA report is intended to consider in particular whether there are impact pathways for which likely significant effects or adverse effects on integrity of European sites were screened out for individual cable routes or for the HND Implementation Plan alone, but which could result in an adverse effect on integrity when considered 'in combination' with other plans and projects affecting the same European sites. The law requires identification of adverse effects on integrity that will arise from the HND Implementation Plan 'alone **or** in combination with other plans or projects'. Therefore, in combination assessment is strictly only necessary where adverse effects on integrity for the relevant study corridor have been dismissed on its own account. Theoretically, these impacts may not result in LSEs in isolation, but acting in-combination with other impact sources the effects can be additive or synergistic, resulting in inter-project LSEs. However, it should be noted LSE have only been screened out from study corridors 'alone' where the study corridor lies beyond the particular zone of influence for a particular impact pathway around a European site.

Checks for proposed and approved projects dealt with by competent authorities within 100 km of a study corridor were undertaken to identify those other plans and projects most likely to interact with the same European sites as that study corridor and to make an assessment of whether other projects in-combination have potential to result in likely significant effects or adverse effects on the integrity of any European sites. This included searches of planning applications and Development Consent Orders on the National Infrastructure Planning portal (2025), developments listed Crown Estate leasing portal (The Crown Estate, 2012 & 2021), and marine licence applications listed on the MMO asset portal (Gov.UK, 2024; MMO, 2024) and the Marine.Gov.Scot portal (Scottish Government, 2025). Projects have been included which are already operational, those which are currently in development and those which are proposed. As proposed study corridors are located throughout most English, Welsh and Scottish waters, the identified projects of interest are grouped by rough geographical regions (**Figure 8**).

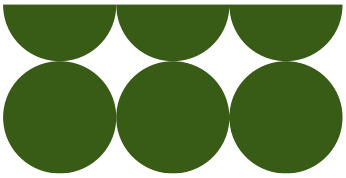
In the previous iteration of this assessment, it was queried by the MMO why the Morgan and Morecambe OWFs were included in the in-combination assessments given they are within the scope and form part of the assessed plan. These have therefore been deleted from this iteration of the in-combination assessment.




Figure 8: Rough geographical regions for grouping projects with the potential contribution to in-combination effects

The following projects and plans (**Table 26**) have been considered for potential in-combination effects with cable routes due to their potential timing, and location within 100 km of a study corridor and the fact they thus present some or all of the following impact pathways to the same European sites as the HND Implementation Plan:

- Temporary physical disturbance of subtidal and/or intertidal habitats;
- Permanent loss of seabed or intertidal habitats;
- Temporary disturbance as a result of increased SSC and sediment deposition;
- Changes in water quality;
- Introduction of invasive non-native species;
- EMF impacts;
- Potential effects due to subsea cable thermal emissions;



- Impacts to marine mammals and fish from underwater sound;
- Barriers to migration;
- Changes in prey availability;
- Collision risk with vessels:
- Airborne sound and visual disturbance to marine mammals and seabirds;
- Noise and visual disturbance on land;
- Risk of bird strike;
- Temporary or permanent loss or removal of terrestrial and intertidal habitats;
- Terrestrial functionally-linked habitat impacts;
- Maintenance activities and cable repair.

In many cases the exact timeframes of activities relating to these projects and plans are not fully known, therefore a precautionary approach has been applied in the inclusion of certain projects.

The assessment of each plan and project was undertaken at a relatively high level as befits a plan level assessment, essentially based on whether the plan or project presented the potential for any of the impact pathways identified above. If so, then it was concluded that given the proximity to the referenced HND Implementation Plan study corridor 'in combination' effects could arise from the plan or project and that study corridor on the same European sites. The HRA of those projects taken to DCO will be much more detailed than the assessment of the HND Implementation Plan. However, since level of detail in the HND Implementation Plan inherently limits the degree of detailed assessment possible it would be inappropriate and not useful to discuss the other projects to a level of detail greater than that possible for the HND Implementation Plan itself.

The risk of underestimating in combination effects from this high-level assessment of other plans or projects is therefore low because of the approach taken to the Appropriate Assessment. Since it is not possible to undertake a quantitative assessment of impacts for the HND Implementation Plan (since details of actual cable corridors are not set by the plan) the appropriate assessment has effectively only concluded no adverse effect on integrity if there is either no impact pathway, or there are mitigation measures available that should be able to address impacts at the project level. So, for example, the assessment has not dismissed impacts because they are expected to fall below a particular numerical threshold that might be exceeded when other plans and projects are considered in combination with HND Implementation Plan.

## Table 25: Assessment of developments within 100 km of the corridors with the potential for marine in-combination effects

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **North West (21 projects/plans)** | | | | |
| **Scottish Sectoral Marine Plan for Offshore Wind Energy 2025** | Marine Plan | The Plan aims to identify the most sustainable plan options for the future development of commercial-scale offshore wind energy in Scotland. The plan has its own HRA which assesses the impacts of offshore wind energy. The 2020 version of the HRA concluded that with mitigation it would be possible to ensure no adverse effect on the integrity of European sites from the Marine Plan, although this does not replace individual project appropriate assessments for planning applications and Development Consent Orders.<br><br>The updated HRA in May 2025 concluded adverse effect on site integrity in relation to bird features both alone and in-combination, and this conclusion remained with the adoption of mitigation measures. | Scottish Government | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br><br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br><br>**INTOG**<br>Aspen_to_Fetteresso<br>North Connect_to_Cenos<br>Beech_to_Cedar<br>Peterhead_to_Cenos |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | Cedar_to_Aspen<br>Cedar_to_Branxton<br>SW_E1c_2_to_Weston Marsh<br>SW_E1c_1_to_Lincolnshire Connection Node |
| **English North West Marine Plans (inshore and offshore)** | Marine Plan | The Plans provides a policy framework which will be used to help inform decision-making on what activities take place in the marine environment and how the marine environment is developed, protected, and improved in the next 20 years. It does not allocate offshore wind areas as this is done via Crown Estate leasing. The plan has its own HRA which assesses the impacts of the plan and concludes that with mitigation it would be possible to ensure no adverse effect on the integrity of European sites from the Marine Plan, although this does not replace individual project appropriate assessments for planning applications and Development Consent Orders. Of particular relevance, the identified corridors all lie within the Marine Plan area. | North West Marine Plans | **HND**<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Strategic Spatial Energy Planning (SSEP)** | Spatial Plan | SSEP is a United Kingdom-wide plan which will map potential locations quantities and types of electricity and hydrogen | NESO | All routes |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | generation and storage infrastructure over time, which are required to meet the future energy demand. | | |
| **Welsh National Marine Plan** | Marine Plan | The Welsh National Marine Plan sets out a long-term vision for the sustainable development of the Welsh marine area. The plan also has its own HRA which assesses offshore wind, wave, and tidal energy, concluding that effects to habitats can be avoided with known available mitigation measures.<br>The HRA does not specifically consider study corridors in Welsh waters as a stand-alone impact pathway but does consider cable installation as part of the offshore wind, wave, and tidal energy assessments. | Welsh Government | **HND**<br>R4_4_to_Bodelwyddan<br>NWIn4<br>NWIn13a<br>R4_6_to_Penwortham<br>Ballantrae_to_Pentir<br>**Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |
| **Joint Fisheries Statement and Fisheries Management Plans** | Management Plan | The Joint Fisheries Statement is a key element of the UK Fisheries Framework, setting out the policies for achieving, or helping to achieve, the eight fisheries objectives set out in Section 2 of the Fisheries Act 2020. This plan also provides a list of Fisheries Management Plans (FMPs), to be delivered over the lifetime of the first statement. | Welsh Government | All routes |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Mersey Tidal Power** | Tidal Energy | A tidal range project to harness renewable energy using a turbine array in a barrage-type solution. | PINs | **HND**<br>Ballantrae_to_Pentir<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Walney 1 and 2** | Offshore Wind Farm | This offshore wind farm has been operational since 2012 and consisted of two phases, each comprising of 51 turbines. It has a capacity of 367 MW. The wind farm is located 15 km from the coast of Walney Island, covering an area of 73 $km^2$. | Orsted | **HND**<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Walney Extension Offshore Wind Farm** | Offshore Wind Farm | Construction of an offshore wind farm extension located to the west and northwest of the existing Walney 1 and 2 offshore wind farms with an upper generating capacity of 750 megawatts (MW), together with offshore and onshore electrical infrastructure including cable route from the coast to a new substation located near Middleton, Lancashire. | PINs<br><br>MMO | **HND**<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Ormonde Offshore Wind Farm** | Offshore Wind Farm | Ormonde Offshore Wind Farm is located in the Irish Sea, 10 km west of Walney Island in Burrow in Furness, Cumbria. The development consists of 30 turbines with a potential capacity of 150 MW. | Vattenfall | **HND**<br>NWIn4<br>R4_6_to_Penwortham<br>NWIn1a |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Barrow Offshore Wind Farm** | Offshore Wind Farm | Barrow Offshore Wind Farm is located in the Irish Sea 7 km southwest from Walney Island near Barrow in Furness, Cumbria. The development consists of 30 turbines with an overall capacity 90 MW. | Orsted | **HND**<br>NWIn4<br>R4_6_to_Penwortham<br>NWIn1a |
| **R4 Project 4 (Mona)** *(Associated with HND)* | Offshore Wind Farm | The Mona Potential Array Area (i.e. the area within which the offshore wind turbines will be located) is located in the east Irish sea, 28.2 km (15.2 nautical miles (NM)) from the north coast of Wales and 39.9 km (21.5 NM) from the northwest coast of England.<br>The proposed capacity of the Mona Offshore Wind Project is 1.5 GW. | Crown Estate<br>Scoping report | **HND**<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Burbo Bank Offshore Wind Farm** | Offshore Wind Farm | In operation since 2007, located on Burbo Flats in Liverpool Bay. The Burbo Bank wind farm has an overall capacity of 90MW with 25 turbines. | Orsted | **HND**<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Burbo Bank Extension offshore wind farm** | Offshore Wind Farm | Proposed Burbo Bank Extension offshore wind farm covering an area of 40 km and with an estimated generating capacity of up to 250 MW. The proposed project would be located west of the operational Burbo Bank offshore wind farm in Liverpool Bay, around 7 km north of the | PINs | **HND**<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | North Wirral coast, 8.5 km from Crosby beach, and 12.2 km from the Point of Ayr on the Welsh coast | | |
| **HyNet Carbon Dioxide Pipeline** | Pipeline | A new build carbon dioxide ($CO_2$) pipeline that will transport $CO_2$ produced and captured by future hydrogen producing facilities and existing industrial premises in North West England and North Wales for offshore storage. The $CO_2$ pipeline will comprise both newbuild and existing pipelines that will be covered under the DCO. When complete it will run from the Ince AGI in Cheshire to Talacre Beach in North Wales. | PINs | **HND**<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Awel y Môr Offshore Wind Farm** | Offshore Wind Farm | Awel y Môr is an offshore wind farm, to generate in excess of 500 MW. The project will be comprised of (but not limited to): an offshore wind farm, including wind turbine generators and associated foundations, wind measurement equipment and array cables; transmission infrastructure, including offshore substations and associated foundations, offshore and onshore export cables (underground), including associated transition bays and jointing bays, an onshore | PINs | **HND**<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | substation, and connection infrastructure into the National Grid. | | |
| **Crown Estate Project Development Area 1** | Offshore wind leasing opportunity | Spatial Design for Offshore Wind Leasing Round 5 has sought to identify the most suitable locations within the Celtic Sea to enable the first commercial scale Floating Offshore Wind leasing opportunity.<br>Three Project Development Areas (PDAs) have been identified close to onshore grid infrastructure with lower levels of constraint. Each PDA aims to facilitate floating offshore wind turbines, generating up to 1.5 GW of power.<br>PD1 comprises the most northern area, 369 km² in size. | Crown Estate<br>Report | **Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |
| **Crown Estate Project Development Area 2** | Offshore wind leasing opportunity | Spatial Design for Offshore Wind Leasing Round 5 has sought to identify the most suitable locations within the Celtic Sea to enable the first commercial scale Floating Offshore Wind leasing opportunity.<br>Three PDAs have been identified close to onshore grid infrastructure with lower levels of constraint. Each PDA aims to facilitate floating offshore wind | Crown Estate<br>Report | **Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | turbines, generating up to 1.5 GW of power.<br>PD2 comprises the most southern area, 358 km² in size. | | |
| **Crown Estate Project Development Area 3** | Offshore wind leasing opportunity | Spatial Design for Offshore Wind Leasing Round 5 has sought to identify the most suitable locations within the Celtic Sea to enable the first commercial scale Floating Offshore Wind leasing opportunity.<br>Three PDAs have been identified close to onshore grid infrastructure with lower levels of constraint.<br>Each PDA aims to facilitate floating offshore wind turbines, generating up to 1.5 GW of power.<br>PD3 comprises the most area, 334 km² in size. | Crown Estate<br>Report | **Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |
| **Minerals Site: Aggregates Liverpool Bay** | Aggregate extraction | Marine aggregate extraction Area 392/393, located in Liverpool Bay north of the Flintshire It.<br>The date of the current licence is 31/8/2024 | Crown Estate | **HND**<br>Ballantrae_to_Pentir<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Minerals Site: Aggregates Hilbre Swash** | Aggregate extraction | Marine aggregate extraction Area, located in Liverpool Bay north of the Flintshire coast.<br>Aggregate extraction has taken place in the current licence area | Crown Estate | **HND**<br>Ballantrae_to_Pentir<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | and previously in an area immediately to the south for over 50 years. This is due to continue until 31/12/2029. | | R4_4_to_Bodelwyddan |
| **Tidal Stream Site: West Anglesey Demonstration Zone** | Tidal power | Four green energy tidal stream projects based in waters off Anglesey. They will provide electricity to the National Grid:<br>• Hydrowing: 10 MW<br>• Verdant: 4.9 MW<br>• MOR Energy: 4.5 MW<br>• Magallanes: 3 MW | Crown Estate | **HND**<br>Ballantrae_to_Pentir<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Tidal Stream Site: Holyhead Deep** | Tidal power | Developing Holyhead Deep into a commercial tidal energy array is proposed to be carried out in a number of phases. The installation of the kite array will be in accordance with a navigation risk assessment which is undertaken to minimise the impact on other sea users.<br>In total there will be 60 1.2 MW units, with a total tidal array capacity at 80 MW (minimum).<br>Grid connection will be made via the Morlais onshore development. | Crown Estate<br><br>Developer | **HND**<br>Ballantrae_to_Pentir<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Ministry of Defence Eskmeals Artillery Trials and range activity** | Military | Initial artillery trial ended 03/31/2024, however there is potential for future trials to take place. | MOD Eskmeals | **HND**<br>Ballantrae_to_Pentir<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | Detailed information beyond live firing dates is not publicly available. | | R4_4_to_Bodelwyddan |
| **Gwynt y Môr** | Offshore Wind Farm | This operational offshore wind farm has a capacity of 576 MW with 160 turbines. It is located off the coast of North Wales between Llandudno and the Wirral. | RWE | **HND**<br>Ballantrae_to_Pentir<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **Rhyl Flats** | Offshore Wind Farm | Rhyl Flats has been operation since 2009 and has a capacity of 90 MW with 25 turbines. It is located in Liverpool Bay, 8 km off the North Wales coast. | RWE | **HND**<br>Ballantrae_to_Pentir<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **North Hoyle** | Offshore Wind Farm | This wind farm consists of 30 turbines with a capacity of 60 MW. It covers an area of 10 $km^2$ and is located off the coast of North Wales between Rhyl and Prestatyn. | OSPAR Commission | **HND**<br>Ballantrae_to_Pentir<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **West of Duddon Sands** | Offshore Wind Farm | An operational offshore wind farm since 2014 with 108 wind turbines and a total capacity of 389 MW. It is located approximately 14 km from Walney Island in Cumbria. | Orsted | **HND**<br>Ballantrae_to_Pentir<br>R4_6_to_Penwortham<br>R4_5_to_Penwortham<br>R4_4_to_Bodelwyddan |
| **South West (9 projects / plans)** | | | | |
| **English South West Marine Plans (inshore and offshore)** | Marine Plan | The Plans provides a policy framework which will be used to help inform decision-making on what activities take place in the | South West Marine Plans | **Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | marine environment and how the marine environment is developed, protected, and improved in the next 20 years. It does not allocate offshore wind areas as this is done via Crown Estate leasing. The plan has its own HRA which assesses the impacts of the plan and concludes that with mitigation it would be possible to ensure no adverse effect on the integrity of European sites from the Marine Plan, although this does not replace individual project appropriate assessments for planning applications and Development Consent Orders. Of particular relevance, the identified HND corridors all lie within the Marine Plan area. | | PDA3_to_Pyworthy |
| **Welsh National Marine Plan** | Marine Plan | The Welsh National Marine Plan sets out a long-term vision for the sustainable development of the Welsh marine area. The plan also has its own HRA which assesses offshore wind, wave, and tidal energy, concluding that effects to habitats can be avoided with known available mitigation measures.<br>The HRA does not specifically consider study corridors in Welsh waters as a stand-alone | Welsh Government | **HND**<br>R4_4_to_Bodelwyddan<br>NWIn4<br>NWIn13a<br>R4_6_to_Penwortham<br>Ballantrae_to_Pentir<br>**Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | impact pathway but does consider cable installation as part of the offshore wind, wave, and tidal energy assessments. | | |
| **Strategic Spatial Energy Planning (SSEP)** | Spatial Plan | SSEP is a GB-wide plan which will map potential locations quantities and types of electricity and hydrogen generation and storage infrastructure over time, which are required to meet the future energy demand. | NESO | All routes |
| **Joint Fisheries Statement and Fisheries Management Plans** | Management Plan | The Joint Fisheries Statement is a key element of the UK Fisheries Framework, setting out the policies for achieving, or helping to achieve, the eight fisheries objectives set out in Section 2 of the Fisheries Act 2020. This plan also provides a list of Fisheries Management Plans (FMPs), to be delivered over the lifetime of the first statement. | Welsh Government | All routes |
| **South Hook Combined Heat & Power Station** | Power station | An integrated combined heat and power (CHP) plant based on combined cycle gas turbine technology including combustion turbine generator(s); heat recovery steam generator(s); steam turbine generator(s); stack for discharge of combustion gases; | PINs | **Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | electrical switchgear; and area reserved for carbon capture.<br>The proposed CHP plant will have an installed capacity of up to 500 MW and produce sufficient electricity to both meet the existing terminal's power needs and to export surplus electricity. New or upgraded electrical transmission connection, eventually to National Grid Electricity Transmission 400 kilovolt (kV) substation at Pembroke Power Station, to be resolved and possibly to be subject of separate DCO application. A number of route options are currently being considered. | | |
| **Hinkley C New Nuclear Build** | Nuclear power station | Development of two new nuclear power stations on the somerset coastline at Hinkley Point, to power 6,000,000 homes. | EDF Energy | **Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |
| **Future Port Talbot** | Floating offshore wind hub and green energy development | The development of Port Talbot, on the Swansea coastline, is proposed to enable a central location for the manufacturing, assembly and integration of FLOW for projects in the Celtic Sea. | ABP | **Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |
| **Llŷr** | Floating Offshore Wind Farm | A floating offshore windfarm 35 km off the Pembrokeshire | NRW | **Celtic Sea**<br>PDA1_to_Llandyfaelog |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | coastline in the Celtic Sea. The development comprises 10 wind turbine generators and the export cable will make landfall at Freshwater West in Milford Haven. | | PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |
| **Erebus** | Floating Offshore Wind Farm | A floating offshore wind farm located 35 km southwest of the Pembrokeshire coastline, with the export cable making landfall at Milford Haven. The project comprises between 6 and 10 wind turbines with up to 23 km of inter-array cables and 49 km of offshore export cable. | NRW | **Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |
| **Seaweed Farm, North Cornwall** | Aquaculture | A Marine Licence application has been submitted covering a 100-hectare area of sea in order to sustainably farm native seaweed. | MMO | **Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node<br>PDA3_to_Pyworthy |
| **The Sizewell C Project** | Nuclear Power Station | A new 3.2 GW Nuclear Power Station in Somerset; generating low-carbon electricity for ~6,000,000 homes. It will be a close copy of Hinkley Point C which is already under construction; and has an expected operational life of 60 years. | PINs | **HNDFUE**<br>SW_E2a_2 |
| **White Cross** | Floating offshore wind farm | A floating offshore wind farm in development to be located 52 km off the North Devon coast. The wind farm will have up to | White Cross | **Celtic Sea**<br>PDA1_to_Llandyfaelog<br>PDA2_to_South_Wales_Connection_Node |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | eight turbines with a maximum capacity of 100 MW of renewable energy. | | PDA3_to_Pyworthy |
| **North East (27 projects / plans)** | | | | |
| **Scottish Sectoral Marine Plan for Offshore Wind Energy** | Marine Plan | The Plan aims to identify the most sustainable plan options for the future development of commercial-scale offshore wind energy in Scotland. The plan has its own HRA which assesses the impacts of offshore wind energy. The 2020 version of the HRA concluded that with mitigation it would be possible to ensure no adverse effect on the integrity of European sites from the Marine Plan, although this does not replace individual project appropriate assessments for planning applications and Development Consent Orders.<br><br>The updated HRA in May 2025 concluded adverse effect on site integrity in relation to bird features both alone and in-combination, and this conclusion remained with the adoption of mitigation measures. | Scottish Government | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br><br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br><br>**INTOG**<br>Aspen_to_Fetteresso<br>North Connect_to_Cenos<br>Beech_to_Cedar<br>Peterhead_to_Cenos<br>Cedar_to_Aspen |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | Cedar_to_Branxton<br>SW_E1c_2_to_Weston Marsh<br>SW_E1c_1_to_Lincolnshire Connection Node |
| **English North East Marine Plans (inshore and offshore)** | Marine Plan | The Plans provides a policy framework which will be used to help inform decision-making on what activities take place in the marine environment and how the marine environment is developed, protected, and improved in the next 20 years. It does not allocate offshore wind areas as this is done via Crown Estate leasing. The plan has its own HRA which assesses the impacts of the plan and concludes that with mitigation it would be possible to ensure no adverse effect on the integrity of European sites from the Marine Plan, although this does not replace individual project appropriate assessments for planning applications and Development Consent Orders. Of particular relevance, the identified corridors all lie within the Marine Plan area. | The North East Marine Plans Documents | **HND**<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2<br>SW_E2a_2 |
| **English East Marine Plans (inshore and offshore)** | Marine Plan | The Plans provides a policy framework which will be used to help inform decision-making on what activities take place in the marine environment and how | East Marine Plans | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | the marine environment is developed, protected, and improved in the next 20 years. It does not allocate offshore wind areas as this is done via Crown Estate leasing. The plan has its own HRA which assesses the impacts of the plan and concludes that with mitigation it would be possible to ensure no adverse effect on the integrity of European sites from the Marine Plan, although this does not replace individual project appropriate assessments for planning applications and Development Consent Orders. Of particular relevance, the identified corridors all lie within the Marine Plan area. | | R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2<br>SW_E2a_2 |
| **Strategic Spatial Energy Planning (SSEP)** | Spatial Plan | SSEP is a GB-wide plan which will map potential locations quantities and types of electricity and hydrogen generation and storage infrastructure over time, which are required to meet the future energy demand. | NESO | All routes |
| **Joint Fisheries Statement and Fisheries Management Plans** | Management Plan | The Joint Fisheries Statement is a key element of the UK Fisheries Framework, setting out the policies for achieving, or helping to achieve, the eight fisheries objectives set out in Section 2 of | Welsh Government | All routes |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | the Fisheries Act 2020. This plan also provides a list of Fisheries Management Plans (FMPs), to be delivered over the lifetime of the first statement. | | |
| **H2Teesside** | Carbon capture plant, pipelines and other infrastructure | A hydrogen production plant of up to 1,200 MW thermal capacity; hydrogen distribution pipelines; an air separation unit or oxygen supply pipeline; carbon dioxide capture and compression facilities and a connection to the Northern Endurance Partnership infrastructure (also known as Net Zero Teesside); a natural gas supply connection; other gas pipelines; an electricity grid connection; water supply and treatment infrastructure; wastewater treatment and disposal infrastructure; and other utilities connections, telecommunications and other associated and ancillary infrastructure. | PINs | **HND**<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit |
| **York Potash Harbour Facilities Order** | Jetty<br>Dredging | The installation of wharf/jetty facilities with two ship loaders capable of loading bulk dry material at a rate of 12m tons per annum (dry weight). Associated dredging operations to create berth. Associated storage building with conveyor to wharf/jetty. Including a | PINs | **HND**<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>**HNDFUE**<br>SW_E1c_1 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | materials handling facility (if not located at Wilton) served by a pipeline (the subject of a separate application) and conveyor to storage building and jetty. | | |
| **The Net Zero Teesside Project** | Car, utilisation and storage | A full chain carbon capture, utilisation and storage (CCUS) project, comprising a $CO_2$ gathering network, including $CO_2$ pipeline connections from industrial facilities on Teesside to transport the captured $CO_2$ (including the connections under the tidal River Tees); a combined cycle gas turbine (CCGT) electricity generating station with an abated capacity circa 850 MW output (gross), cooling water, gas and electricity grid connections and $CO_2$ capture; a $CO_2$gathering/booster station to receive the captured $CO_2$ from the gathering network and CCGT generating station; and the onshore section of a $CO_2$ transport pipeline for the onward transport of the captured $CO_2$ to a suitable offshore geological storage site in the North Sea. | PINs | **HND**<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>**HNDFUE**<br>SW_E1c_1 |
| **Dogger Bank D Wind Farm** | Offshore Wind Farm | Dogger Bank D Offshore Wind Farm encompasses a circa 2000 MW offshore wind farm, offshore | PINs | **HND**<br>R4_3_to_Weston_Marsh |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| *(Associated with HND)* | | high voltage transmission and potential onshore transmission and Hydrogen Production Facility infrastructure. | | SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E2a_2 |
| **Dogger Bank South Offshore Wind Farms** *(Associated with HND)* | Offshore Wind Farm | The Dogger Bank South Offshore Wind Farms project comprises the two offshore wind farms (Dogger Bank South West and Dogger Bank South East) and associated offshore and onshore infrastructure including offshore and onshore high voltage electricity cables, onshore and offshore electricity substation(s), connection(s) to the National Grid and ancillary and temporary works. | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2<br>SW_E2a_2 |
| **Dogger Bank Creyke Beck** | Offshore Wind Farm | Dogger Bank Creyke Beck (previously known as Dogger Bank Offshore Wind Farm) is the first stage of Forewind's offshore wind energy development of the Dogger Bank Zone (Zone 3, Round 3). It will comprise two wind farms, each with an installed capacity of up to 1.2GW, which are expected to connect to the national grid in the East Riding of Yorkshire. Therefore, Dogger Bank Creyke Beck could have a total installed capacity of | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | up to 2.4 GW. The offshore wind farms will be located in the Dogger Bank Zone which is located between 125 to 290 km off the coast of East Yorkshire. The onshore elements of the development will be located in the East Riding of Yorkshire. | | |
| **Hornsea Offshore Wind Farm (Zone 4) - Project One** | Offshore Wind Farm | Project One is the first development proposed within the Hornsea Zone.<br>Project One will constitute up to three offshore wind generating stations with a total capacity of up to 1,200 MW and will include all offshore and onshore infrastructure. The DCO for Project One would authorise the construction and operation of up to 332 wind turbines, up to two offshore accommodation platforms, up to five offshore high-voltage alternating current (HVAC) collector substations, up to two offshore HVDC converter stations, an offshore HVAC reactive compensation substation, subsea inter-array electrical circuits, a marine connection to the shore approximately 150 km in length, a foreshore connection and from the proposed landfall point at Horseshoe Point, onshore | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | cables which will connect the offshore wind farms to the onshore electrical transmission station and the connection from there to National Grid's existing substation at North Killingholme, a distance of approximately 40 km. | | |
| **Hornsea Offshore Wind Farm (Zone 4) - Project Two** | Offshore Wind Farm | Project Two is an Offshore Wind Generating Station with maximum output of 1,800 MW. | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2<br>SW_E2a_2 |
| **Hornsea Project Three Offshore Wind Farm** | Offshore Wind Farm | Development of the Hornsea Project Three offshore wind farm with an approximate capacity of up to 2,400 MW off the coast of Norfolk.<br>This is within the area known as Zone 4, under the Round 3 offshore wind licensing arrangements established by The Crown Estate | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Hornsea Project Four Offshore Wind Farm** | Offshore Wind Farm | Development of the Hornsea Project Four offshore wind farm.<br>This is within the western area of the former Hornsea known as Zone 4, under the Round 3 offshore wind licensing arrangements established by The Crown Estate. | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2<br>SW_E2a_2 |
| **TIGRE Project 1 (TP1)** | Offshore gas-fired power station | Transition to integrated Gas and Renewable Energy (TIGRE™) is the development and deployment of gas-fired power station facilities offshore integrated with existing late-life gas fields to utilise the gas at source and avoid gas transportation and processing costs.<br>Existing transmission infrastructure associated with offshore windfarms is utilised to connect the development to the National Grid. The Project is based entirely offshore (beyond 12 NM).<br>Key components of TIGRE™ are:<br>• Mid to late-life gas production assets seeking | TIGRE Group | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | production cost reduction opportunities to extend production life;<br>• Construction of proven technology of aero-derivative open-cycle gas turbine generators located offshore either on or adjacent to gas production facilities and close to an offshore windfarm substation. This will have a capacity of 220 MW; and<br>• Energy is exported through existing offshore wind farm transmission infrastructure utilising up to 50% spare capacity available from intermittency of wind generation. | | |
| **Outer Dowsing Offshore Wind (Generating Station)** *(Associated with HND)* | Offshore Wind Farm | The Outer Dowsing Offshore Wind project comprises an offshore wind farm and associated offshore and onshore infrastructure including offshore and onshore high voltage electricity cables, onshore and offshore electricity substation(s), connection(s) to the National Grid and ancillary and temporary works. | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Triton Knoll Offshore Wind Farm** | Offshore Wind Farm | The development comprised the construction and operation of up to 288 wind turbine generators with a maximum tip height of up to 220 m, offshore substations, meteorological stations and underwater cabling to connect the turbines and substations. This is now operational. | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2 |
| **Aldbrough Hydrogen Storage** | Hydrogen storage | Underground Gas Storage Facility - up to 9 underground caverns (cavities), gas processing plant and associated development with capacity to store up to 420 standard million cubic meters of hydrogen, having an import and export capability of up to 12.1 mcm per day. | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2 |
| **Humber Low Carbon Pipelines** | Pipeline | Construction of $CO_2$ (to facilitate CCUS) and hydrogen ($H_2$) transportation pipelines between Drax in North Yorkshire and Easington in East Riding of Yorkshire, connecting various emitters and generators in the Humber. | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE** |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | The application will include associated infrastructure comprising pipeline internal gauge traps, a multi-junction, block valves, a compressor station and associated works.<br>Other projects in the region linked to this project include: Hydrogen Production at Saltend (Equinor); Carbon Capture (Drax); Blue & Green Hydrogen Hub (Killingholme (Uniper)); Keadby Clean Power Hub (SSE Thermal); and Zero Carbon Humber Enabling Paths to Sustainable Steel Making (British Steel). There is also the Zero Humber project (VPI Immingham and Phillips 66) and the Gigastack Green $H_2$ project (Orsted and ITM Power) in the Humber. | | SW_E1c_1<br>SW_E1c_2 |
| **Humber Gateway** | Offshore Wind Farm | Fully operational offshore wind farm since 2015 with 73 turbines and a total capacity of 219 MW. Located 8 km from Holderness, just north of the mouth of the River Humber. | RWE | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **River Humber Gas Pipeline Replacement Project** | Pipeline | The replacement of a 42 natural gas transmission pipeline, housed within a tunnel beneath the Humber Estuary commencing approximately 2 miles north east of Goxhill, North Lincolnshire, terminating approximately 1 mile south east of Paull, East Riding of Yorkshire. | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2 |
| **Able Marine Energy Park** | Dredging and land reclamation | The nationally significant infrastructure project is a quay of solid construction on the south bank of the River Humber together with an ecological compensation scheme comprising both temporary and permanent habitat creation on the opposite bank. Associated development includes dredging and land reclamation, onshore facilities for the manufacture, assembly and storage of marine energy installation components.<br>Notably there are amendments to the original application design:<br>• An amendment to extend the period for compulsory acquisition for one parcel authorised by the Able | PINs<br>PINs ii<br>PINs iii | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | Marine Energy Park DCO 2014; and<br>• Two amendments to the layout of the quay that was authorised by the Able Marine Energy Park DCO 2014. | | |
| **Immingham Green Energy Terminal** | Jetty and plant | The project comprises a new liquid bulk import terminal and associated processing facility, the purpose of which is to deliver a green hydrogen production facility. Imported ammonia will be stored and processed at the site to create green hydrogen, for onward transport to filling stations throughout the UK. Key project infrastructure comprises; a new approach trestle, jetty superstructure and topside infrastructure; and land side processing infrastructure. | PINs BETA | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HND**<br>SW_E1c_1<br>SW_E1c_2 |
| **Hornsea Project Two Subtidal Cable Repairs, Replacement or Reburial Works Within the Humber Estuary SAC** | Cable repair | Hornsea Project Two has applied for a Marine Licence to cover the repair or replacement of a section of cable, and also reburial of the cable if it becomes exposed for the lifetime of the project i.e. 25 years. (2020 – 2044).<br>The Marine Licence being applied for here only covers works within the subtidal area | MMO | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | (i.e. seaward of the intertidal area and below mean low water springs (MLWS)), the marine licence extends from the boundary of MLWS to the boundary of the Humber Estuary SAC. | | |
| **Eastern Green Link 1** | Subsea Cable | This project comprises construction of a new converter station in Torness and a new substation in Branxton. Underground cables will run to the landfall at Thorntonloch Beach, where the 176 km HDVC cable will extend to the proposed landfall in Durham. | Marine.Gov.Scot | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br><br>**HNDFUE**<br>SW_E2a_2_to_Near Richborough<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh |
| **Eastern Green Link 2** | Subsea Cable | This project comprises a 2 GW HVDC cable extending 505 km from Peterhead in Aberdeenshire to Drax in North Yorkshire. The cable will make landfall at Sandford Bay and will continue underground for approximately 1 km to a new converter station in Peterhead. It will make landfall in England in Fraisthorpe Sands, before extending underground for approximately 68 km to the Wren Hall converter station in Drax. | Marine.Gov.Scot | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>R4_1_to_Birkhill_Wood<br>R4_2_to_Birkhill_Wood<br>PA_1_to_Birkhill_Wood<br>R4_3_to_Weston_Marsh<br><br>**HNDFUE**<br>SW_E2a_2_to_Near Richborough<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Eastern Green Link 3** | Subsea Cable | This project comprises a 2 GW HVDC cable extending from Peterhead in Aberdeenshire and Lincolnshire. It will include the construction of a new converter stations in both Peterhead and Lincolshire. This project is still in its planning stages but may include up to 12 km of underground cabling in Peterhead and up to 550 km of subsea cable. The final landfall locations are also still to be confirmed. | Marine.Gov.Scot | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>R4_1_to_Birkhill_Wood<br>R4_2_to_Birkhill_Wood<br>PA_1_to_Birkhill_Wood<br>R4_3_to_Weston_Marsh<br><br>**HNDFUE**<br>SW_E2a_2_to_Near Richborough<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh |
| **Eastern Green Link 4** | Subsea Cable | This project comprises a new HVDC cable that will connect Fife to Norfolk. It will include a 500 km subsea cable from Kinghorn, Fife to South Humber, Lincolnshire. A 14 km underground cable will extend from the landfall in Kinghorn to a new converter station at Westfield near Ballingry, Fife. A 100 km underground cable will extend from the landfall in South Humber to a new converter station near Walpole in Norfolk. | Marine.Gov.Scot | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>R4_1_to_Birkhill_Wood<br>R4_2_to_Birkhill_Wood<br>PA_1_to_Birkhill_Wood<br>R4_3_to_Weston_Marsh<br><br>**HNDFUE**<br>SW_E2a_2_to_Near Richborough<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Westernmost Rough** | Offshore Wind Farm | Operational since 2015 with a capacity of 210 MW of renewable power and 35 turbines. Located 8 km off the coast of Withernsea in East Riding of Yorkshire. | Lindy Energy | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2 |
| **South East (24 projects / plans)** | | | | |
| **English South East Marine Plans (inshore and offshore)** | Marine Plan | The Plans provides a policy framework which will be used to help inform decision-making on what activities take place in the marine environment and how the marine environment is developed, protected, and improved in the next 20 years. It does not allocate offshore wind areas as this is done via Crown Estate leasing. The plan has its own HRA which assesses the impacts of the plan and concludes that with mitigation it would be possible to ensure no adverse effect on the integrity of European sites from the Marine Plan, although this does not replace individual project appropriate assessments for planning applications and Development Consent Orders. Of | South East Marine Plan | **HNDFUE**<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | particular relevance, the identified corridors all lie within the Marine Plan area. | | |
| **English South Marine Plans (inshore and offshore)** | Marine Plan | The Plans provides a policy framework which will be used to help inform decision-making on what activities take place in the marine environment and how the marine environment is developed, protected, and improved in the next 20 years. It does not allocate offshore wind areas as this is done via Crown Estate leasing. The plan has its own HRA which assesses the impacts of the plan and concludes that with mitigation it would be possible to ensure no adverse effect on the integrity of European sites from the Marine Plan, although this does not replace individual project appropriate assessments for planning applications and Development Consent Orders. | South Marine Plans | **HNDFUE**<br>SW_E2a_2 |
| **SSEP** | Spatial Plan | SSEP is a GB-wide plan which will map potential locations quantities and types of electricity and hydrogen generation and storage infrastructure over time, which are required to meet the future energy demand. | NESO | All routes |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Joint Fisheries Statement and Fisheries Management Plans** | Management Plan | The Joint Fisheries Statement is a key element of the UK Fisheries Framework, setting out the policies for achieving, or helping to achieve, the eight fisheries objectives set out in Section 2 of the Fisheries Act 2020. This plan also provides a list of Fisheries Management Plans (FMPs), to be delivered over the lifetime of the first statement. | Welsh Government | All routes |
| **Norfolk Boreas** | Offshore Wind Farm | Offshore Wind Farm (Power Station) – Maximum Capacity 1.8GW also associated infrastructure required to export the electricity to the National Grid substation at Necton in Norfolk | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E2a_2 |
| **Nearshore Seaweed Cultivation of Native Species** | Aquaculture | Seaweed farm construction planned for September 2024 and to be scaled up until 2026. | MMO | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1c_1<br>SW_E1c_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Norfolk Vanguard** | Offshore Wind Farm | Norfolk Vanguard is a proposed offshore windfarm with an approximate capacity of 1800MW off the coast of Norfolk.<br>The centre of Norfolk Vanguard West is 67 km from the Bacton coast and 63 km from the Gorleston coast at their nearest point; it is approximately 295 $km^2$<br>The centre of Norfolk Vanguard East is 98 km from the Bacton coast and 86 km from the Gorleston coast at their nearest point; it is approximately 297 $km^2$. | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>SW_E1a_to_Lincs_CN<br>PA_1_to_Birkhill Wood<br>R4_1_to_Birkhill Wood<br>R4_2_to_Birkhill Wood<br>**HNDFUE**<br>SW_E2a_2 |
| **Lincs** | Offshore Wind Farm | This offshore wind farm is operational with 75 turbines and a total capacity of 270 MW. It is located 8 km off the Skegness coast with the export cable extending into the Wash to the River Nene. | Lindy Energy | **HND**<br>R4_3_to_Weston_Marsh<br>R4_1_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1a_to_Lincolnshire_Connection_Node<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh |
| **Lynn and Inner Dowsing** | Offshore Wind Farm | Two separate offshore wind farms located 5 km off Skegness which have been merged into one. Each project has 27 turbines, resulting in a total of 54 turbines with a maximum capacity of 194.4 MW. | GLID Wind Farms | **HND**<br>R4_3_to_Weston_Marsh<br>R4_1_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1a_to_Lincolnshire_Connection_Node<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
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| **Sheringham and Dudgeon Extension Projects** | Offshore Wind Farm | This relates to extensions to both the operational Sheringham Shoal Offshore Wind Farm and the Dudgeon Offshore Wind Farm. Sheringham Shoal has a total of 88 turbines with a capacity of 317 MW, and Dudgeon has 67 turbines with a total capacity of 402 MW. The extension will double the capacity of the existing wind farms. | PINs | **HND**<br>R4_3_to_Weston_Marsh<br>R4_1_to_Birkhill Wood<br>**HNDFUE**<br>SW_E1a_to_Lincolnshire_Connection_Node<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh |
| **East Anglia ONE Offshore Windfarm** | Offshore Wind Farm | Development of an offshore wind farm which consisted of up to up to 325 wind turbine generators and associated infrastructure, with an installed capacity of 1200 MW, located 43 km from the Suffolk Coast.<br>Part of a development of approximately 7200 MW of wind capacity off the coast of East Anglia, known as Zone 5 under the Crown Estate Round 3 Offshore Wind Farm Licensing Arrangements. A joint venture between Scottish Power Renewables and Vattenfall Wind Power. This is now operational. | PINs | **HNDFUE**<br>SW_E2a_2 |
| **East Anglia TWO Offshore Windfarm** | Offshore Wind Farm | An offshore wind farm which could consist of up to 75 turbines, generators and associated infrastructure, with | PINs | **HNDFUE**<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
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| | | an installed capacity of up to 900 MW, located 37 km from Lowestoft and 32 km from Southwold.<br>From landfall, the cables will be routed underground to an onshore substation which will in turn connect into the national electricity grid via a NGET substation and cable sealing end compounds, the latter to be owned and operated by NGET. | | |
| **East Anglia THREE Offshore Wind Farm** | Offshore Wind Farm | Development of an offshore windfarm with an approximate capacity of 1200 MW off the coast of East Anglia, within the area known as Zone 5, under the Round 3 Offshore Wind Licensing Arrangements. | PINs | **HNDFUE**<br>SW_E2a_2 |
| **Five Estuaries Offshore Wind Farm** | Offshore Wind Farm | Five Estuaries is an offshore wind farm expected to generate in excess of 300 MW.<br>The project will be comprised of (but not limited to):<br>• an offshore wind farm, including wind turbine generators and associated foundations and array cables; and<br>• transmission infrastructure, including offshore substations and associated | PINs | **HNDFUE**<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | foundations, offshore and onshore export cables (underground), including associated transition bays and jointing bays, an onshore substation, and connection infrastructure into the National Grid. | | |
| **Galloper Offshore Wind Farm** | Offshore Wind Farm | The development comprised the installation, operation of Galloper Wind Farm, a proposed offshore generating station and its associated electrical connection.<br>The Galloper Wind Farm generating station would involve the development of up to 140 wind turbine generators, with a maximum capacity of 504 MW encompassing an area of 183 $km^2$ within three areas.<br>Export cables would be brought to shore and a proposed substation would be constructed to connect the project to the national grid network via existing adjacent transmission towers. This includes new electric downlines and sealing end compounds to connect the wind farm to the existing 400 kV network. This is now operational. | PINs<br>MMO | **HNDFUE**<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Eastern Green Link 3** | Subsea Cable | This project comprises a 2 GW HVDC cable extending from Peterhead in Aberdeenshire and Lincolnshire. It will include the construction of a new converter stations in both Peterhead and Lincolshire. This project is still in its planning stages but may include up to 12 km of underground cabling in Peterhead and up to 550 km of subsea cable. The final landfall locations are also still to be confirmed. | Marine.Gov.Scot | **HNDFUE**<br>SW_E2a_2_to_Near Richborough |
| **Eastern Green Link 4** | Subsea Cable | This project comprises a new HVDC cable that will connect Fife to Norfolk. It will include a 500 km subsea cable from Kinghorn, Fife to South Humber, Lincolnshire. A 14 km underground cable will extend from the landfall in Kinghorn to a new converter station at Westfield near Ballingry, Fife. A 100 km underground cable will extend from the landfall in South Humber to a new converter station near Walpole in Norfolk. | Marine.Gov.Scot | **HNDFUE**<br>SW_E2a_2_to_Near Richborough |
| **Sea Link** | Subsea cable | This project comprises construction of a new converter station within 5 km of the proposed Friston substation to be connected via HVAC underground cables between | PINs | **HNDFUE**<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
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| | | the new converter station and the proposed Friston substation.<br>The connection will continue via HVDC underground cables from the new converter station to the coast and will join the new offshore HVDC cable at Suffolk Coast. The new HVDC offshore cable will be approximately 130 km long and will link with Kent Coast at Pegwell Bay. | | |
| **North Falls Offshore Wind Farm** | Offshore Wind Farm | An offshore electricity generating station approximately 24.5 km from its nearest point at the Port of Lowestoft. It is estimated to have an installed capacity in excess of 100 MW and will principally comprise offshore wind turbines together with associated infrastructure (onshore and offshore) including a connection to the electricity transmission network. | PINs | **HNDFUE**<br>SW_E2a_2 |
| **Bradwell B new nuclear power station** | Nuclear Power Station | A new nuclear power station proposed to be constructed at Bradwell-on-Sea, Essex. It would be capable of generating up to 2.2 GW of electricity. | Bradwell B Project | **HNDFUE**<br>SW_E2a_2 |
| **Perrys Farm Hazardous Waste Management Facility** | Hazardous Waste Facility | Continued extraction of sand and gravel, extraction of clay, along with the development and construction of a recycling and | Planning.Data.Gov | **HNDFUE**<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | soil treatment centre, air pollution control residues treatment facility and associated works, importation and disposal of hazardous waste by landfill of up to 120,000 tonnes per annum, and a restoration scheme | | |
| **Kentish Flats Extension** | Offshore Wind Farm | The proposed development comprises the erection of 10 to 17 wind turbines with a maximum tip height of 145 metres, monopile foundations, and underwater cabling to connect the turbines together and to export the electricity generated.<br>The export cables will come ashore close to Hampton Pier where they will connect to the onshore underground electricity cables in a transition pit. | PINs | **HNDFUE**<br>SW_E2a_2 |
| **Thanet Extension Offshore Wind Farm** | Offshore Wind Farm | An offshore wind generating station of capacity up to 340 MW. Approximately 8 km off the east coast of Kent, in areas surrounding Thanet Offshore Wind Farm | PINs | **HNDFUE**<br>SW_E2a_2 |
| **Disposal of dredged material** | Dredged material disposal | Disposal of dredged material arising from maintenance dredging at Harwich and Felixstowe Harbour, Haven approach channel and Harwich International Port. | Harwich Maintenance Dredging Port of Felixstowe | **HNDFUE**<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **London Array repair works** | Windfarm repair and maintenance | A new Marine Licence application intended to supplement the existing wind farm lifetime cable repair/replacement marine licence.<br><br>The licence was awarded on 05 May 2016 and is valid for the lifetime of the wind farm until 2039. The licence currently covers the following activities:<br>• Array cable repair and replacement;<br>• Maximum of 10 repair or replacement activities over the remaining operational lifetime;<br>• Each instance of repair or replacement is limited to a maximum length of 3,110 m.<br><br>Following a review of the current licensed activities at London Array Offshore Wind Farm and future requirements, the following allowances are being requested within a new and separate marine licence:<br>• An additional 20 instances of licensed cable repair or replacement activities. | MMO | **HNDFUE**<br>SW_E2a_2 |
| **Area 528** | Aggregate extraction | A Marine Licence application is being made for a total of 15 million tonnes of aggregate to | MMO | **HNDFUE**<br>SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | be extracted over the licence term of 15 years, with a maximum annual tonnage of 1 million tonnes. | | |
| **Area 530** | Aggregate extraction | Aggregate extraction by trailer suction hopper dredger will take place within the boundaries defined for a period of 15 years at an annual average of 1 million tonnes with the ability to increase this to 2 million tonnes if demand requires but not in excess of the total 15 million tonnes being applied for. | MMO | **HNDFUE**<br>SW_E2a_2 |
| **Area 1806** | Aggregate extraction | A Marine Licence application that will enable the company to dredge marine aggregate from Area 1806 for a period of 15 years. The area has not previously been dredged.<br>If permitted, extraction of resources from Area 1806 will be undertaken using trailer suction hopper dredgers. Operating vessels are typically capable of removing 5,000-12,000 tonnes per cargo. | MMO | **HNDFUE**<br>SW_E2a_2 |
| **West Scotland (12 projects/plans)** | | | | |
| **National Marine Plan for Scotland** | Marine Plan | This plan covers the management of both Scottish inshore (out to 12 nm) and offshore waters (12-200 nm). Provides an overarching framework for all activities in | Scottish Government | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | Scottish seas to enable sustainable developments in a way which will protect and enhance the marine environment. | | SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br><br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br><br>**INTOG**<br>Aspen_to_Fetteresso<br>North Connect_to_Cenos<br>Beech_to_Cedar<br>Peterhead_to_Cenos<br>Cedar_to_Aspen<br>Cedar_to_Branxton<br>SW_E1c_2_to_Weston Marsh<br>SW_E1c_1_to_Lincolnshire Connection Node |
| **National Planning Framework 4** | Spatial Plan | This plan sets out how places and environments will be planned and/or designed in future to promote and facilitate development that addresses the | Scottish Government | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>SW_E1a to SW_E1b |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | global climate emergency and nature crisis. | | SW_E1a_to_Fiddes<br><br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br><br>**INTOG**<br>Aspen_to_Fetteresso<br>North Connect_to_Cenos<br>Beech_to_Cedar<br>Peterhead_to_Cenos<br>Cedar_to_Aspen<br>Cedar_to_Branxton<br>SW_E1c_2_to_Weston Marsh<br>SW_E1c_1_to_Lincolnshire Connection Node |
| **Scottish Sectoral Marine Plan for Offshore Wind Energy** | Marine Plan | The Plan aims to identify the most sustainable plan options for the future development of commercial-scale offshore wind energy in Scotland. The plan has its own HRA which assesses the impacts of offshore wind energy. | Scottish Government | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | The 2020 version of the HRA concluded that with mitigation it would be possible to ensure no adverse effect on the integrity of European sites from the Marine Plan, although this does not replace individual project appropriate assessments for planning applications and Development Consent Orders.<br><br>The updated HRA in May 2025 concluded adverse effect on site integrity in relation to bird features both alone and in-combination, and this conclusion remained with the adoption of mitigation measures. | | **HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br><br>**INTOG**<br>Aspen_to_Fetteresso<br>North Connect_to_Cenos<br>Beech_to_Cedar<br>Peterhead_to_Cenos<br>Cedar_to_Aspen<br>Cedar_to_Branxton<br>SW_E1c_2_to_Weston Marsh<br>SW_E1c_1_to_Lincolnshire Connection Node |
| **SSEP** | Spatial Plan | SSEP is a GB-wide plan which will map potential locations quantities and types of electricity and hydrogen generation and storage infrastructure over time, which are required to meet the future energy demand. | NESO | All routes |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Blackmill Bay Harbour** | Existing harbour improvements | Low impact work to improve Blackmill Bay Harbour including to improve access, wave protection and better facilities | Marine.Gov.Scot | **HNDFUE**<br>SW_W1_to_Ballantrae<br>Kilmarnock South_to_Ballantrae Ballantrae_to_Pentir |
| **Colonsay Harbour** | Improvement works | Upgrade works to four ferry terminals to allow larger vessels to berth, on the Isle of Colonsay. | Marine.Gov.Scot | **HNDFUE**<br>SW_W1_to_Ballantrae<br>Kilmarnock South_to_Ballantrae |
| **Carradale Harbour** | Improvement works and dredging | Works to install a new pontoon and dredging of the seabed to provide suitable water depths. Dredged material will be disposed of at a licenced disposal site in Campbeltown. | Marine.Gov.Scot | **HNDFUE**<br>SW_W1_to_Ballantrae<br>Kilmarnock South_to_Ballantrae |
| **Flex Marine Power Ltd** | Offshore wind | A Marine Licence application has been made for a single turbine in the Sound of Islay, Scotland which will transport power back on land via an umbilical cable. | Marine.Gov.Scot | **HND**<br>NWIn13a<br>**HNDFUE**<br>SW_W1_to_Ballantrae<br>Kilmarnock South_to_Ballantrae Ballantrae_to_Pentir |
| **Hunterston Construction Yard** | Upgrades to quayside and associated infrastructure, and dredging with potential sea disposal | This proposed project involves a new quay and associated infrastructure at Hunterston Construction Yard in West Kilbride. Dredging will be required with up to 1,546,660 $m^3$ to be removed. The preferred option is for dredged material to be re-used as part of the development, but there may be a requirement for disposal in a licensed offshore disposal ground. | Marine.Gov.Scot | **HND**<br>NWIn13a<br>**HNDFUE**<br>SW_W1_to_Ballantrae Kilmarnock South_to_Ballantrae Ballantrae_to_Pentir |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Nova Òran na Mara** | Tidal Energy Project | A proposal is in place to develop a tidal energy project in the Sound of Islay with up to 30 tidal stream turbines installed on the seabed. Once installed, the turbines will be fully installed with nothing visible above the water surface. | Marine.Gov.Scot | **HND**<br>NWIn13a<br>**HNDFUE**<br>SW_W1_to_Ballantrae<br>Kilmarnock South_to_Ballantrae Ballantrae_to_Pentir |
| **Port Ellen Ferry Terminal** | Redevelopment of ferry terminal and dredging | A proposal is in place to redevelop the Port Ellen Ferry terminal. This includes construction of new piers and dredging of 32,000 $m^3$ of material (both rock and soft sediment). | Marine.Gov.Scot | **HND**<br>NWIn13a<br>**HNDFUE**<br>SW_W1_to_Ballantrae<br>Kilmarnock South_to_Ballantrae Ballantrae_to_Pentir |
| **Uig Harbour Redevelopment** | Harbour redevelopment | A Marine Licence has been granted for upgrades to existing infrastructure at Uig Harbour. This includes a requirement for capital dredging and disposal, and the construction of new berths. | Marine.Gov.Scot | **HND**<br>SW_N4_to_Arnish_(Lewis)<br>**HNDFUE**<br>SW_N3_to_Arnish |
| **East Scotland (43 projects/plans)** | | | | |
| **National Marine Plan for Scotland** | Marine Plan | This plan covers the management of both Scottish inshore (out to 12 nm) and offshore waters (12-200 nm). Provides an overarching framework for all activities in Scottish seas to enable sustainable developments in a way which will protect and | Scottish Government | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br><br>**HNDFUE** |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | enhance the marine environment. | | SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br><br>**INTOG**<br>Aspen_to_Fetteresso<br>North Connect_to_Cenos<br>Beech_to_Cedar<br>Peterhead_to_Cenos<br>Cedar_to_Aspen<br>Cedar_to_Branxton<br>SW_E1c_2_to_Weston Marsh<br>SW_E1c_1_to_Lincolnshire Connection Node |
| **National Planning Framework 4** | Spatial Plan | This plan sets out how places and environments will be planned and/or designed in future to promote and facilitate development that addresses the global climate emergency and nature crisis. | Scottish Government | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br><br>**HNDFUE**<br>SW_E2b_to_Peterhead 2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br><br>**INTOG**<br>Aspen_to_Fetteresso<br>North Connect_to_Cenos<br>Beech_to_Cedar<br>Peterhead_to_Cenos<br>Cedar_to_Aspen<br>Cedar_to_Branxton<br>SW_E1c_2_to_Weston Marsh<br>SW_E1c_1_to_Lincolnshire Connection Node |
| **Scottish Sectoral Marine Plan for Offshore Wind Energy** | Marine Plan | The Plan aims to identify the most sustainable plan options for the future development of commercial-scale offshore wind energy in Scotland. The plan has its own HRA which assesses the impacts of offshore wind energy. The 2020 version of the HRA concluded that with mitigation it would be possible to ensure no adverse effect on the integrity of European sites from the Marine | Scottish Government | **HND**<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank SW_E1a_to_Hawthorn Pit<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br><br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | Plan, although this does not replace individual project appropriate assessments for planning applications and Development Consent Orders.<br><br>The updated HRA in May 2025 concluded adverse effect on site integrity in relation to bird features both alone and in-combination, and this conclusion remained with the adoption of mitigation measures. | | SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br><br>**INTOG**<br>Aspen_to_Fetteresso<br>North Connect_to_Cenos<br>Beech_to_Cedar<br>Peterhead_to_Cenos<br>Cedar_to_Aspen<br>Cedar_to_Branxton<br>SW_E1c_2_to_Weston Marsh<br>SW_E1c_1_to_Lincolnshire Connection Node |
| **SSEP** | Spatial Plan | SSEP is a GB-wide plan which will map potential locations quantities and types of electricity and hydrogen generation and storage infrastructure over time, which are required to meet the future energy demand. | NESO | All routes |
| **Ardersier Port, Inverness** | Quay wall construction and capital dredging | A Marine Licence application has been granted for the construction of a new quay wall (above mean high water springs) and subsequent dredging to expose the quay | Marine.Gov.Scot | **HND**<br>SW_N1 to Spittal<br>SW_NE4_to_New Deer<br>**HNDFUE**<br>SW_NE4_to_New Deer |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | wall to the marine environment. The dredged material is to be disposed of at sea | | |
| **Arven Offshore Wind Farm** *(Associated with HNDFUE)* | Offshore wind farm | A Marine Licence application is being produced for the proposed development of an offshore wind farm on the east coast of the Shetland Islands, with two array areas. This is approximately 23 km from the Shetland Islands. | Marine.Gov.Scot | **HNDFUE**<br>SW_NE1a_to_Shetland<br>SW_NE1b_to_Shetland<br>SW_NE1c_to_Shetland<br>Shetland_to_Blackhillock |
| **Ayre Offshore Wind Farm** | Offshore wind farm | A Marine Licence application is being made for a The proposed development of up to 67 offshore wind turbines with up to 185 km of inter-array cable, and 60 km of interconnector cables, and associated offshore transmission assets, 22 km off the coast of Orkney windfarm, which makes with landfall in Sinclair's Bay in Caithness. and is 22 km away from the Orkney coast | Marine.Gov.Scot | **HND**<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_NE2_to_Spittal |
| **Bellrock Offshore Wind Farm** | Offshore wind farm | The proposed development of an offshore wind farm with up to 80 turbines, 120 km east of Stonehaven | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank<br>SW_E1a to Hawthorn Pit<br>SW_NE7_ To_Peterhead<br>**HNDFUE** |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_2_to_Near Richborough<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2<br>SW_NE8_to_Peterhead 1<br>SW_NE7_to_Peterhead DCSS<br>SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech<br>Beech_to_Cedar |
| **Berwick Bank Offshore Transmission** *(Associated with HNDFUE)* | Offshore transmission | The proposed development of offshore transmission infrastructure associated with Berwick Bank Offshore Wind Farm, with up to eight Offshore Substation Platforms/convertor station platforms, interconnector cables, up to eight offshore export cables and associated scour and rock protection. | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>SW_E1a to Hawthorn Pit<br>PA_2_ to_Berwick_Bank<br>SW_NE7_ To_Peterhead<br>**HNDFUE**<br>SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E3_to_Fiddes |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | SW_E1c_1_to_Lincs_CN<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2a_2_to_Near Richborough<br>SW_E2b_to_Peterhead 2<br>SW_NE8_to_Peterhead 1<br>SW_NE7_to_Peterhead DCSS<br>SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Aspen_to_Fetteresso<br>Cedar_to_Branxton |
| **Bowdun Offshore Wind Farm** | Offshore wind farm | The proposed development of up to 67 offshore wind turbines with associated inter-array cables, up to 156 km inter-array cables, and 35 km of interconnector cables, and associated offshore transmission assets, 35 44 km off the coast of Aberdeenshire, and making landfall in Benholm. | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank<br>SW_E1a to Hawthorn Pit<br>SW_NE7_ To_Peterhead<br>**HNDFUE**<br>SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_2_to_Near Richborough<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2<br>SW_NE8_to_Peterhead 1<br>SW_NE7_to_Peterhead DCSS |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech<br>Beech_to_Cedar |
| **Broadshore Hub** | Offshore wind farm | Proposed development of three separate offshore wind farms known collectively as the Broadshore hub: Broadshore Offshore Wind Farm, Sinclair Offshore Wind Farm and Scaraben Offshore Wind Farm. The Broadshore Hub is located in the Moray Firth. | Marine.Gov.Scot | **HND**<br>SW_NE7_ To_Peterhead<br>SW_NE4_to_New Deer<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_NE7_to_Peterhead DCSS<br>SW_NE8_to_Peterhead 1<br>SW_NE6_to_Peterhead 2<br>SW_NE3_to_New Deer 2<br>SW_NE4_to_New Deer<br>Shetland_to_Blackhillock<br>SW_NE2_to_Spittal<br>**INTOG**<br>Peterhead_to_Cenos |
| **Buchan Offshore Wind Farm** *(Associated with HNDFUE)* | Floating offshore wind farm | Proposed development of a floating offshore wind farm in the Moray Firth and making landfall north of Peterhead. This | Marine.Gov.Scot | **HND**<br>SW_NE7_ To_Peterhead<br>SW_NE4_to_New Deer<br>SW_N1 to Spittal |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | includes up to 70 turbines with associated infrastructure. | | **HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_NE7_to_Peterhead DCSS<br>SW_NE8_to_Peterhead 1<br>SW_NE6_to_Peterhead 2<br>SW_NE3_to_New Deer 2<br>SW_NE4_to_New Deer<br>Shetland_to_Blackhillock<br>SW_NE2_to_Spittal<br>**INTOG**<br>Peterhead_to_Cenos |
| **Caledonia Offshore Wind Farm**<br>*(Associated with HND and HNDFUE)* | Offshore wind farm | The proposed development of an offshore wind farm in the Moray Firth, split into two phases: Caledonia North and Caledonia South, 38 km off the coast of Aberdeenshire. The wind farm is expected to have a mix of fixed-bottom and floating technology. | Marine.Gov.Scot | **HND**<br>SW_NE7_ To_Peterhead<br>SW_NE4_to_New Deer<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_NE7_to_Peterhead DCSS<br>SW_NE8_to_Peterhead 1<br>SW_NE6_to_Peterhead 2<br>SW_NE3_to_New Deer 2<br>SW_NE4_to_New Deer<br>Shetland_to_Blackhillock<br>SW_NE2_to_Spittal<br>**INTOG**<br>Peterhead_to_Cenos |
| **Cenos** | Floating offshore wind farm | Proposed development of an offshore wind farm 185 km | Marine.Gov.Scot | **HND** |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| *(Associated with INTOG)* | | offshore east of Aberdeen with up to 95 wind turbines. The export cable is proposed to make landfall in Peterhead, Scotland. | | SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank<br>SW_E1a to Hawthorn Pit<br>SW_NE7_ To_Peterhead<br>**HNDFUE**<br>SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_2_to_Near Richborough<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2<br>SW_NE8_to_Peterhead 1<br>SW_NE7_to_Peterhead DCSS<br>SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech<br>Beech_to_Cedar |
| **Central North Sea Electrification (CNSE)** | Electrification of existing oil and gas infrastructure | The proposed installation of HVDC to contribute to the decarbonisation of the offshore energy sector via the electrification of existing oil and | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | gas infrastructure in the central North Sea. | | SW_E1a to Hawthorn Pit<br>SW_NE7_ To_Peterhead<br>**HNDFUE**<br>SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_2_to_Near Richborough<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2<br>SW_NE8_to_Peterhead 1<br>SW_NE7_to_Peterhead DCSS<br>SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech<br>Beech_to_Cedar |
| **Culzean Pilot Project** | Floating offshore wind farm | A proposal to demonstrate the possibility of electrifying existing oil and gas assets in the North Sea via the installation of a floating offshore wind farm connecting to the existing Culzean Field oil and gas platform | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank<br>SW_E1a to Hawthorn Pit<br>SW_NE7_to_Peterhead<br>**HNDFUE** |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_2_to_Near Richborough<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2<br>SW_NE8_to_Peterhead 1<br>SW_NE7_to_Peterhead DCSS<br>SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech<br>Beech_to_Cedar |
| **Dales Voe, Shetland** | Ultra-deep water quay | Expansion of existing deep-water facility with a proposed ultra deep-water quay development, which will facilitate the increased industrial activity and will serve offshore structures such as windfarms. | Marine.Gov.Scot | **HNDFUE**<br>SW_NE1a_to_Shetland<br>SW_NE1b_to_Shetland<br>SW_NE1c_to_Shetland<br>Shetland_to_Blackhillock |
| **Eastern Green Link 1** | Subsea Cable | This project comprises construction of a new converter station in Torness and a new substation in Branxton. Underground cables will run to | Marine.Gov.Scot | **HND**<br>SW_NE7_to_Peterhead<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | the landfall at Thorntonloch Beach, where the 176 km HDVC cable will extend to the proposed landfall in Durham. | | SW_E1a_to_Hawthorn Pit<br><br>**HNDFUE**<br>SW_NE7_to_Peterhead_DCSS<br>SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh<br><br>**INTOG**<br>Scaraben_to_Peterhead<br>Peterhead_to_Cenos<br>Aspen_to_Fetteresso<br>Cedar_to_Branxton |
| **Eastern Green Link 2** | Subsea Cable | This project comprises a 2 GW HVDC cable extending 505 km from Peterhead in Aberdeenshire to Drax in North Yorkshire. The cable will make landfall at Sandford Bay and will continue underground for | Marine.Gov.Scot | **HND**<br>SW_NE7_to_Peterhead<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>R4_1_to_Birkhill_Wood |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | approximately 1 km to a new converter station in Peterhead. It will make landfall in England in Fraisthorpe Sands, before extending underground for approximately 68 km to the Wren Hall converter station in Drax. | | R4_2_to_Birkhill_Wood<br>PA_1_to_Birkhill_Wood<br>R4_3_to_Weston_Marsh<br><br>**HNDFUE**<br>SW_NE7_to_Peterhead_DCSS<br>SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh<br><br>**INTOG**<br>Scaraben_to_Peterhead<br>Peterhead_to_Cenos<br>Aspen_to_Fetteresso<br>Cedar_to_Branxton |
| **Eastern Green Link 3** | Subsea Cable | This project comprises a 2 GW HVDC cable extending from Peterhead in Aberdeenshire and Lincolnshire. It will include the construction of a new converter | Marine.Gov.Scot | **HND**<br>SW_NE7_to_Peterhead<br>SW_E1a_to_Lincolnshire Connection Node<br>PA_2_ to_Berwick_Bank |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | stations in both Peterhead and Lincolnshire. This project is still in its planning stages but may include up to 12 km of underground cabling in Peterhead and up to 550 km of subsea cable. The final landfall locations are also still to be confirmed. | | SW_E1a_to_Hawthorn Pit<br>R4_1_to_Birkhill_Wood<br>R4_2_to_Birkhill_Wood<br>PA_1_to_Birkhill_Wood<br>R4_3_to_Weston_Marsh<br><br>**HNDFUE**<br>SW_NE7_to_Peterhead_DCSS<br>SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh<br><br>**INTOG**<br>Scaraben_to_Peterhead<br>Peterhead_to_Cenos<br>Aspen_to_Fetteresso<br>Cedar_to_Branxton |
| **Eastern Green Link 4** | Subsea Cable | This project comprises a new HVDC cable that will connect Fife to Norfolk. It will include a 500 km | Marine.Gov.Scot | **HND**<br>SW_NE7_to_Peterhead<br>SW_E1a_to_Lincolnshire Connection Node |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | subsea cable from Kinghorn, Fife to South Humber, Lincolnshire. A 14 km underground cable will extend from the landfall in Kinghorn to a new converter station at Westfield near Ballingry, Fife. A 100 km underground cable will extend from the landfall in South Humber to a new converter station near Walpole in Norfolk. | | PA_2_ to_Berwick_Bank<br>SW_E1a_to_Hawthorn Pit<br>R4_1_to_Birkhill_Wood<br>R4_2_to_Birkhill_Wood<br>PA_1_to_Birkhill_Wood<br>R4_3_to_Weston_Marsh<br><br>**HNDFUE**<br>SW_NE7_to_Peterhead_DCSS<br>SW_E2b_to_Peterhead 2<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_Near Richborough<br>SW_E2a_2_to_SW_E1c_1<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_SW_E1c_2<br>SW_E1a_to_Branxton<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincolnshire Connection Node<br>SW_E1c_2_to_Weston Marsh<br><br>**INTOG**<br>Scaraben_to_Peterhead<br>Peterhead_to_Cenos<br>Aspen_to_Fetteresso<br>Cedar_to_Branxton |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **European Marine Energy Centre - Fall of Warness Tidal Test Site** | Tidal test centre expansion, Orkney | This proposal relates to the expansion of the Fall of Warness tidal test centre in Orkney, including installation of subsea cables and associated protection, and new tidal testing berths accommodating new tidal energy devices. | Marine.Gov.Scot | **HND**<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_NE2_to_Spittal<br>Shetland_to_Blackhillock<br>SW_N2_to_Near Dounreay<br>SW_NE3_to_New Deer 2 |
| **European Marine Energy Centre - Billia Croo Wave Test Site** | Tidal test centre expansion, Orkney | This proposal relates to the expansion of the Billia Croo wave test centre site, including an extension to the existing lease area for further testing. | Marine.Gov.Scot | **HND**<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_NE2_to_Spittal<br>Shetland_to_Blackhillock<br>SW_N2_to_Near Dounreay<br>SW_NE3_to_New Deer 2 |
| **European Offshore Wind Deployment Centre** | Offshore wind farm | Several Marine Licence Applications have been granted for the European Offshore Wind Deployment Centre. This is an innovative offshore wind turbine deployment facility proposed off the coast of Aberdeenshire, with approximately 11 offshore turbines. | Marine.Gov.Scot | **HND**<br>SW_NE7_ To_Peterhead<br>SW_NE4_to_New Deer<br>SW_E1a to SW_E1b<br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_NE7_to_Peterhead DCSS<br>SW_NE8_to_Peterhead 1<br>SW_NE6_to_Peterhead 2<br>SW_NE3_to_New Deer 2<br>SW_NE4_to_New Deer<br>SW_E3_to_Fiddes<br>SW_E2b_to_SW_E2a_1 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | SW_E2a_1_to_SW_E2a_2<br>SW_E2a_2_to_SW_E1c_1<br>**INTOG**<br>Peterhead_to_Cenos<br>Aspen_to_Fetteresso |
| **Fair Isle Ferry Terminal** | Upgrades to quay including dredging and sea disposal | This proposal relates to upgrades to Fair Isle Ferry Terminal in the Shetlands. New quay structures will be built and existing breakwaters will be improved. This includes dredging to a sufficient water depth. | Marine.Gov.Scot | **HNDFUE**<br>SW_NE2<br>SW_NE1a_to_Shetland<br>SW_NE1b_to_Shetland<br>SW_NE1c_to_Shetland<br>Shetland_to_Blackhillock |
| **Scammalin Bay** | Construction and dredging, and sea disposal | Extension of existing slipway and landing jetty in Sammalin Bay on the Island of Faray, Orkney. This includes underwater noise production, and dredging and sea disposal | Marine.Gov.Scot | **HND**<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_NE2_to_Spittal<br>Shetland_to_Blackhillock<br>SW_N2_to_Near Dounreay<br>SW_NE3_to_New Deer 2 |
| **Flora** | Offshore wind farm | An offshore wind farm is proposed to be developed offshore of Peterhead, Scotland (or Aberdeen, to be confirmed). Geophysical surveys and geotechnical surveys have already been undertaken. | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank<br>SW_E1a to Hawthorn Pit<br>SW_NE7_ To_Peterhead<br>**HNDFUE**<br>SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | SW_E2a_2_to_Near Richborough<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2<br>SW_NE8_to_Peterhead 1<br>SW_NE7_to_Peterhead DCSS<br>SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech Beech_to_Cedar |
| **Flotta Ultra-Deep Water Quay** | Dredging | There is potential for dredging to occur to create an ultra-deep-water quay on the Isle of Flotta in Orkney. Dredged material will be used to reclaim land behind the quay wall so no disposal at sea will be required. | Marine.Gov.Scot | **HND**<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_NE2_to_Spittal<br>Shetland_to_Blackhillock<br>SW_N2_to_Near Dounreay<br>SW_NE3_to_New Deer 2 |
| **Forthwind Offshore Wind Demonstration** | Offshore wind farm | This involves the construction and operation of offshore turbines with associated infrastructure and an export cable, located in the Firth of Forth. This project will be delivered in several phases. | Marine.Gov.Scot | **HND**<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Fiddes<br>**HNDFUE**<br>SW_E1a_to_Branxton |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | SW_E3_to_Fiddes<br>**INTOG**<br>Aspen_to_Fetteresso<br>Cedar_to_Branxton |
| **Green Volt** | Offshore wind farm | Green Volt is a proposed offshore wind development located in the Moray Firth, with landfall expected in Peterhead. Up to 51 turbines are expected. | Marine.Gov.Scot | **HND**<br>SW_NE7_ To_Peterhead<br>SW_NE4_to_New Deer<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_NE7_to_Peterhead DCSS<br>SW_NE8_to_Peterhead 1<br>SW_NE6_to_Peterhead 2<br>SW_NE3_to_New Deer 2<br>SW_NE4_to_New Deer<br>Shetland_to_Blackhillock<br>SW_NE2_to_Spittal<br>**INTOG**<br>Peterhead_to_Cenos |
| **Hatson Pier** | Expansion and dredging | A Marine Licence application is being submitted for the proposed expansion of Hatson Pier and Ferry Terminal in Orkney. This will require dredging of 4850 $m^{3,}$ but there will be no at-sea disposal. The dredged material will instead be incorporated into the | Marine.Gov.Scot | **HND**<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_NE2_to_Spittal<br>Shetland_to_Blackhillock<br>SW_N2_to_Near Dounreay<br>SW_NE3_to_New Deer 2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | construction of the pier extension. | | |
| **Inch Cape** | Offshore wind farm | Inch Cape is currently in construction with completion expected in 2027. This is expected to be one of Scotland's biggest windfarms, with up to 72 turbines being built, with associated infrastructure. | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank<br>SW_E1a to Hawthorn Pit<br>SW_NE7_ To_Peterhead<br>**HNDFUE**<br>SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_2_to_Near Richborough<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2<br>SW_NE8_to_Peterhead 1 SW_NE7_to_Peterhead DCSS SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech<br>Beech_to_Cedar |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| **Invergordon Service Base Phase 5 Development** | Harbour redevelopment | The redevelopment of Invergordon Service Base harbour in the Cromarty Firth includes the construction of a rock armour breakwater and capital dredging with sea disposal. | Marine.Gov.Scot | **HND**<br>SW_NE7_ To_Peterhead<br>SW_NE4_to_New Deer<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_NE7_to_Peterhead DCSS<br>SW_NE8_to_Peterhead 1<br>SW_NE6_to_Peterhead 2 SW_NE3_to_New Deer 2<br>SW_NE4_to_New Deer<br>Shetland_to_Blackhillock<br>SW_NE2_to_Spittal<br>**INTOG**<br>Peterhead_to_Cenos |
| **Morven Offshore Wind Farm** *(Associated with HND)* | Offshore wind farm | The Morven offshore wind farm is proposed 60 km off the Aberdeenshire coast and will include up to 191 wind turbines with associated supports and structures and up to 844 km of inter-array cables. This will also require up to 751 km of inter-connector cables and up to 11 offshore platforms. | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank<br>SW_E1a to Hawthorn Pit<br>SW_NE7_ To_Peterhead<br>**HNDFUE**<br>SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_2_to_Near Richborough<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN |

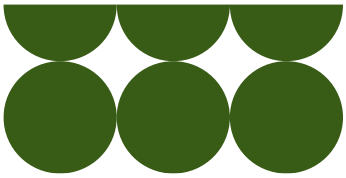
| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2<br>SW_NE8_to_Peterhead 1<br>SW_NE7_to_Peterhead DCSS<br>SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech<br>Beech_to_Cedar |
| **Muir Mhòr Offshore Wind Farm**<br>*(Associated with HNDFUE)* | Offshore wind farm | This development is proposed to be located approximately 63 km east of Peterhead in Scotland with up to 67 turbines and 250 km of inter-array cables. There will be up to three export cables each 90 km in length. | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank<br>SW_E1a to Hawthorn Pit<br>SW_NE7_ To_Peterhead<br>**HNDFUE**<br>SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_2_to_Near Richborough<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | SW_NE8_to_Peterhead 1<br>SW_NE7_to_Peterhead DCSS<br>SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech<br>Beech_to_Cedar |
| **Ossian**<br>*(Associated with HNDFUE)* | Floating offshore wind farm | Located approximately 80 km southeast off the coast of Aberdeen, the Ossian floating offshore wind farm is proposed to have a maximum of 270 wind turbines supported on floating foundations. | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank<br>SW_E1a to Hawthorn Pit<br>SW_NE7_ To_Peterhead<br>**HNDFUE**<br>SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_2_to_Near Richborough<br>SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN<br>SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2<br>SW_NE8_to_Peterhead 1<br>SW_NE7_to_Peterhead DCSS<br>SW_E1a_to_SW_E1c_2 |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | | | **INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech<br>Beech_to_Cedar |
| **Pentland** | Floating offshore wind farm | A Marine Licence has been secured for the development of a floating offshore wind farm approximately 7.5 km off the coast of Dounreay, Caithness. The development will include two offshore export cables and up to seven floating turbines and associated infrastructure. | Marine.Gov.Scot | **HND**<br>SW_NE7_ To_Peterhead<br>SW_NE4_to_New Deer<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_E2b_to_Peterhead 2<br>SW_NE7_to_Peterhead DCSS<br>SW_NE8_to_Peterhead 1<br>SW_NE6_to_Peterhead 2<br>SW_NE3_to_New Deer 2<br>SW_NE4_to_New Deer<br>Shetland_to_Blackhillock<br>SW_NE2_to_Spittal<br>**INTOG**<br>Peterhead_to_Cenos |
| **Port of Leith** | Outer berth development and dredging | A Marine Licence Application has been submitted for the improvement of existing berths at the Port of Leith, Edinburgh. The new berth will be approximately 125 m long and 35 m wide. This will also require | Marine.Gov.Scot | **HND**<br>PA_2_ to_Berwick_Bank<br>SW_E1a_to_Fiddes<br>**HNDFUE**<br>SW_E1a_to_Branxton |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | dredging, with 47,000 $m^3$ of material to be removed as part of pre-enabling works, and further maintenance dredging required during operation. | | SW_E3_to_Fiddes<br>**INTOG**<br>Aspen_to_Fetteresso<br>Cedar_to_Branxton |
| **Salamander** | Floating offshore wind farm | A proposal is in place for the development of an offshore wind farm 35 km east of Peterhead. This will include up to seven offshore turbines and floating substructures, and two export cables. | Marine.Gov.Scot | **HND**<br>SW_E1a to SW_E1b<br>SW_E1a_to_Fiddes<br>PA_2_ to_Berwick_Bank<br>SW_E1a to Hawthorn Pit<br>SW_NE7_ To_Peterhead<br>**HNDFUE**<br>SW_E2a_2_to_SW_E1c_1<br>SW_E2b_to_SW_E2a_1<br>SW_E2a_2_to_Near Richborough SW_E3_to_Fiddes<br>SW_E1c_1_to_Lincs_CN SW_E1c_1_to_SW_E1c_2<br>SW_E1a_to_Lincs_CN<br>SW_E2b_to_Peterhead 2 SW_NE8_to_Peterhead 1 SW_NE7_to_Peterhead DCSS SW_E1a_to_SW_E1c_2<br>**INTOG**<br>Cedar_to_Aspen<br>Aspen_to_Fetteresso<br>Peterhead_to_Cenos<br>Cedar_to_Branxton<br>Aspen_to_Beech<br>Beech_to_Cedar |
| **West of Orkney** *(Associated with HND)* | Offshore wind farm | An offshore wind farm is proposed off the west coast of Orkney with up to 125 fixed- | Marine.Gov.Scot | **HND**<br>SW_N1 to Spittal |

| Development name | Development type | Further Details | Link | Study corridors within an estimated 100 km |
|---|---|---|---|---|
| | | bottom wind turbines, up to 500 km of inter-array cables and up to five offshore export cables. The landfall is proposed to be in Caithness. | | **HNDFUE**<br>SW_NE2_to_Spittal<br>Shetland_to_Blackhillock<br>SW_N2_to_Near Dounreay<br>SW_NE3_to_New Deer 2 |
| **Westray Tidal Array** | Tidal turbine development | A proposal is in place for up to 70 tidal turbines to be placed within Westray Firth, Orkney with a maximum of five export cables and inter-array cables. This is being developed as part of the European Marine Energy Centre. | Marine.Gov.Scot | **HND**<br>SW_N1 to Spittal<br>**HNDFUE**<br>SW_NE2_to_Spittal<br>Shetland_to_Blackhillock<br>SW_N2_to_Near Dounreay<br>SW_NE3_to_New Deer 2 |



A total of 128 projects and plans have been identified as having potential for in-combination effects with the installation, operation and maintenance, and/or decommissioning phases of the proposed cable routes. However, it should be noted that some plans (notably the Scottish Sectoral Marine Plan, Welsh National Marine Plan, or the English Marine Plans) are in the list more than once as they have a potential in combination effect with corridors in multiple geographic areas.

Currently there are no confirmed designs or methodologies for each of the cable routes. As such, there is insufficient information to be able to accurately assess the potential for in-combination effects to occur in any detail. Therefore, potential for in combination effects cannot be ruled out and the projects in **Table 25** should be assessed at project level. However, since the approach taken to screening corridors for appropriate assessment has been very precautionary, it is considered that the potential for in combination effects arises from corridors that have already been screened in for appropriate assessment in the Test of Likely Significant Effects.

In accordance with the relevant legislative test, in-combination assessment is required only where adverse effects on integrity (AEOI) have been excluded for the HND Implementation Plan alone. The plan-level assessment has only concluded no AEOI where either (i) no impact pathway exists, or (ii) mitigation at project level would address potential effects. The assessment has not relied on impacts (with or without mitigation) falling below quantitative thresholds (e.g. a particular noise threshold) that could subsequently be exceeded by multiple projects in combination. Therefore, if a pathway of impact exists, the HRA has identified the need for mitigation and the measures available to avoid an adverse effect on integrity.

The mitigation measures identified throughout the HRA and MCZ reports for the identified 'alone' impacts would be capable of addressing the contribution of the HND Implementation Plan to 'in combination' effects with other plans and projects and could also be applied to those other plans and projects to mitigate the overall 'in combination' effect to an acceptable level. For example, if two cables or projects result in noise impacts on the same European site, the identified noise control measures identified in this report (e.g. seasonal avoidance, noise reduction techniques) can be employed to render both acceptable. However, the magnitude and extent of those measures would need reviewing at the project level, since detailed design parameters are not set by the HND Implementation Plan.

## Terrestrial plans and projects

In terms of terrestrial interactions with other plans and projects ('in combination' effects), **Table 26** below identifies the key terrestrial plans and projects where in combination effects with the terrestrial components of corridor routes are likely to occur. Most of these are local authority Local Plans, which set out the housing and employment expectations in each local planning authority over a 15–20-year period. The Local Plans are discussed in lieu of individual planning applications for housing or employment development for reasons of conciseness and because the vast majority of housing and employment allocations in a local authority will be on sites allocated in Local Plans. Housing and employment development could result in disturbance of sensitive SACs or SPAs during construction, or

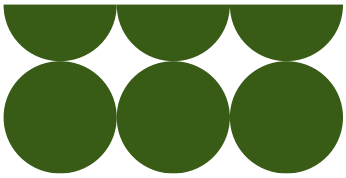
during occupation from recreational pressure, or loss of functionally linked land associated with SPAs, 'in combination' with one or more of the corridors in this HRA.

The other plans included are Shoreline Management Plans for the relevant frontages and their associated daughter documents (Coastal Strategies and individual coastal schemes). While these are coastal plans, they usually include works in the terrestrial or the intertidal environment to improve or maintain existing coastal defences or, in some cases, install new defences. In frontages where coastal defence works are taking place simultaneously with the landfall of each corridor within the SMP frontage there is potential for in combination effects particularly through disturbance. While it is unlikely that landfall and unrelated coastal defence works would occur simultaneously in the same location, they could occur close enough to a sensitive SPA or SAC, as identified in the preceding tables, to result in disturbance without mitigation.

Currently there are no confirmed designs or methodologies for each of the cable routes. As such, there is insufficient detail to be able to accurately assess the potential for in-combination effects to occur in any detail. Therefore, the projects in **Table 26** should subsequently be assessed at project level. However, since the approach taken to screening corridors for appropriate assessment has been very precautionary it is considered that the potential for in combination effects arises from corridors that have already been screened in for appropriate assessment in the Test of Likely Significant Effects. There are mitigation measures identified throughout this report that have been identified as being available and suitable to address the identified impacts from the corridors in the HND Implementation Plan alone. The same types of measures would also address the contribution of the projects in the HND Implementation Plan to 'in combination' effects with other plans and projects. However, the magnitude and extent of those measures would need reviewing at the project level, since detailed design parameters are not set by the HND Implementation Plan.

The '1% of the SPA population' broad metric for identifying a parcel as functionally linked to an SPA is widely used as a broad guide in England and Scotland[18]. It is set so low specifically to capture the potential for multiple developments across an area to collectively have an adverse effect on the integrity of an SPA 'in combination'. Therefore, if both the relevant corridor and the other development identified as having potential for 'in combination' effects use this metric (and any other refinements agreed with Natural England) to identify and address losses of functionally linked land, that would address any 'in combination' effect. For noise/visual disturbance, where there is potential for overlap in the areas that might be subject to disturbance, this would be able to be addressed provided each delivers mitigation to address their contribution and thus remove potential residual effects.

[18] Note that there may be other considerations beyond simply the numerical factor of whether a given land parcel supports more than 1% of the SPA population. For example, 1% for a large population which is above its conservation objective may not be an issue but for a very small population that is way below its conservation objective this could be a large impact on the feature. Natural Resources Wales in particular have confirmed that they do not use this metric. Rather they take things on a case-by-case basis, looking at the present population to the conservation objective and then see how a project would affect that population on its own and in combination.



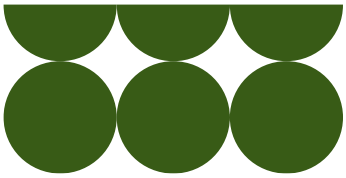
Therefore, it would be possible for cumulative adverse effects on integrity to be avoided (e.g. by seasonal avoidance of key periods) or sufficiently mitigated.

## Table 26: Terrestrial plans or projects where an in-combination effect may arise

| Region/Cluster | Terrestrial Plan or Project | Link | Relevant Study corridors |
|---|---|---|---|
| West Scotland | South Ayrshire Local Plan has a housing requirement of a housing land requirement of 5184 units between 2016 and 2032 | Local development plan 2 - South Ayrshire Council | Ballantrae_to_Pentir (HND) |
| | East Ayrshire Local Plan has a housing requirement of 4050 dwellings.<br>South Ayrshire Local Plan has a housing requirement of a housing land requirement of 5184 units between 2016 and 2032 | Adopted Local Development Plan 2 · East Ayrshire Council<br><br>Local development plan 2 - South Ayrshire Council | SW_W1_to_Ballantrae (HND) |
| | East Ayrshire Local Plan has a housing requirement of 4050 dwellings.<br>South Ayrshire Local Plan has a housing requirement of a housing land requirement of 5184 units between 2016 and 2032 | Adopted Local Development Plan 2 · East Ayrshire Council<br><br>Local development plan 2 - South Ayrshire Council | Kilmarnock South_to_Ballantrae (HND) |
| | Outer Hebrides Plan has a requirement for 92 homes per year | The Current Development Plan \| Comhairle nan Eilean Siar | SW_N3_to_Arnish (HNDFUE) |
| | Outer Hebrides Plan has a requirement for | The Current Development Plan \| Comhairle nan Eilean Siar | SW_N4_to_Arnish_(Lewis) (HND) |

| Region/Cluster | Terrestrial Plan or Project | Link | Relevant Study corridors |
|---|---|---|---|
| | 92 homes per year | | |
| East Scotland | Highland Local Plan has a requirement of 12,929 dwellings between 2021 and 2031 | Highland-wide Local Development Plan \| Highland-wide Local Development Plan \| The Highland Council | SW_N2_to_Near Dounreay (HNDFUE) |
| | Highland Local Plan has a requirement of 12,929 dwellings between 2021 and 2031 | Highland-wide Local Development Plan \| Highland-wide Local Development Plan \| The Highland Council | SW_N1 to Spittal (HND) |
| | Highland Local Plan has a requirement of 12,929 dwellings between 2021 and 2031 | Highland-wide Local Development Plan \| Highland-wide Local Development Plan \| The Highland Council | SW_NE2_to_Spittal (HNDFUE) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | Shetland_to_Blackhillock (HNDFUE) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | SW_NE4_to_New Deer (ES26) (HND)<br>SW_NE4_to_New Deer (HNDFUE) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | SW_NE3_to_New Deer 2 (HNDFUE) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | SW_NE8_to_Peterhead 1 (HNDFUE) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | SW_NE6_to_Peterhead 2 (HNDFUE) |

| Region/Cluster | Terrestrial Plan or Project | Link | Relevant Study corridors |
|---|---|---|---|
| | from 2016 to 2032 | | |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | Scaraben_to_Peterhead 2 (INTOG) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | SW_NE7_to_Peterhead DCSS (HNDFUE) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | SW_E2b_to_Peterhead 2 (HNDFUE) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | SW_NE7_ To_Peterhead (HND) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | Peterhead to Cenos (INTOG) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | Aspen to Fetteresso (INTOG) |
| | Aberdeenshire Local Plan identifies a requirement for 18200 dwellings from 2016 to 2032 | Aberdeenshire Local Development Plan 2023 - Aberdeenshire Council | SW_E1a_to_Fiddes (HND) |
| | Aberdeenshire Local Plan | Aberdeenshire Local Development Plan | SW_E3_to_Fiddes (HNDFUE) |



| Region/Cluster | Terrestrial Plan or Project | Link | Relevant Study corridors |
|---|---|---|---|
| | identifies a requirement for 18200 dwellings from 2016 to 2032 | 2023 - Aberdeenshire Council | |
| | East Lothian Local Plan has a housing requirement of 10,050 dwellings from 2009 to 2024 | Local Development Plan 2018 \| Local Development Plan \| East Lothian Council | SW_E1a_to_Branxton (HNDFUE) |
| | East Lothian Local Plan has a housing requirement of 10,050 dwellings from 2009 to 2024 | Local Development Plan 2018 \| Local Development Plan \| East Lothian Council | Cedar_to_Branxton (INTOG) |
| Wales | Swansea Local Plan has a housing requirement of 9,510 dwellings to 2038<br>Bridgend Local Plan has a housing requirement of 7,575 to 2033<br>Lavernock Point to St Anne's Head Shoreline Management Plan and associated Coastal Strategies | Swansea Local Development Plan 2023-2038 (LDP2) - Swansea<br>Adopted Replacement Local Development Plan 2018-2033 | PDA2_to_South_Wales_Connection_Node (Celtic Sea) |
| | Carmarthenshire Local Plan has a housing requirement of 8,835<br>Lavernock Point to St Anne's Head Shoreline Management Plan and associated Coastal Strategies | Local Development Plan 2018 - 2033 - Carmarthenshire County Council | PDA1_to_Llandyfaelog (Celtic Sea) |

| Region/Cluster | Terrestrial Plan or Project | Link | Relevant Study corridors |
|---|---|---|---|
| | Gwynedd Local Plan is in an early stage of development<br>Anglesey Local Plan is in an early stage of development<br>St Anne's Head to Great Orme's Head Shoreline Management Plan | Gwynedd Local Development Plan (the new Plan)<br>Anglesey Local Development Plan (the new plan) | Ballantrae_to_Pentir (HND) |
| | Conwy Local Development Plan allocates 4300 dwellings and 14ha of employment<br>Great Orme's Head to Scotland Shoreline Management Plan and associated Coastal Strategies | Replacement Local Development Plan - Conwy County Borough Council | NWIn1a (HND) |
| North East England | The Tyne to Flamborough Head Shoreline Management Plan<br>Northumberland Local Plan has a housing requirement for 17,700 dwellings | Northumberland County Council - Northumberland Local Plan | PA_2_ to_Berwick_Bank (HND) |
| | The Tyne to Flamborough Head Shoreline Management Plan<br>Durham Local Plan identifies a residual housing requirement of 5,214<br>Sunderland Local Plan has a housing requirement of 6,705 dwellings | Development Plan for County Durham - Durham County Council<br>CSDP_Review_2024_-_Final_.pdf | SW_E1a_to_Hawthorn Pit (HND) |

| Region/Cluster | Terrestrial Plan or Project | Link | Relevant Study corridors |
|---|---|---|---|
| | Hull Local Plan has a housing requirement of 9,920 dwellings to 2032<br>Flamborough Heath Gibraltar Point Shoreline Management Plan | Local plan \| Hull | R4_1_to_Birkhill Wood (HND)<br>R4_2_to_Birkhill_Wood (HND)<br>PA_1_to_Birkhill_Wood (HND) |
| North West England | Great Orme's Head to Scotland Shoreline Management Plan and associated Coastal Strategies<br>Central Lancashire Local Plan allocates 20,010 dwellings and approximately 46ha of employment to 2038<br>Blackpool Local Plan allocates 4,200 dwellings to 2027<br>Fylde Local Plan allocates 7,768 dwellings and approximately 62ha of employment to 2032<br>West Lancashire Local Plan allocates 2,800 dwellings and approximately 75ha of employment to 2027 | Home - Central Lancashire Local Plan<br>Blackpool Council planning policy \| Local plan \| Core strategy<br>Fylde Local Plan to 2032 (adopted October 2018) – Fylde Council<br>The Local Plan 2023-2040 - West Lancashire Borough Council | R4_5_to_Penwortham (HND)<br>R4_6_to_Penwortham (HND) |
| South West England | North Devon and Torridge Local Plan has a requirement for f 17,220 dwellings and 84.9 hectares of | Torridge District Council - North Devon and Torridge Local Plan 2011-2031 | PDA3_to_Pyworthy |

| Region/Cluster | Terrestrial Plan or Project | Link | Relevant Study corridors |
|---|---|---|---|
| | employment land to 2031.<br>Hartland Point to Anchor Head Shoreline Management Plan and associated Coastal Strategies | | |
| East and South East England | Sea Link DCO<br>Thanet Local Plan allocates 17,140 dwellings and approximately 53ha of employment to 2031<br>Dover Local Plan allocates 10,998 dwellings and approximately 31ha of employment to 2031<br>Isle of Grain to South Foreland Shoreline Management Plan and associated Coastal Strategies | Thanet Local Plan, Adopted 2020 & other policy documents - Thanet<br>Dover District Local Plan | SW_E2a_2_to_Near Richborough (HNDFUE) |
| | Flamborough Head to Gibraltar Point SMP<br>Gibraltar Point to Hunstanton SMP<br>East Lindsey Local Plan has a housing requirement of 9,620 dwellings to 2031 | Adopted Local Plan 2018 - East Lindsey District Council | SW_E1a_to_Lincs_CN (HND) |
| | Flamborough Head to Gibraltar Point SMP<br>Gibraltar Point to Hunstanton SMP | Adopted Local Plan 2018 - East Lindsey District Council<br>South East Lincolnshire Local Plan - South East Lincolnshire Local Plan | R4_3_to_Weston_Marsh (HND) |

| Region/Cluster | Terrestrial Plan or Project | Link | Relevant Study corridors |
|---|---|---|---|
| | East Lindsey Local Plan has a housing requirement of 9,620 dwellings to 2031<br>South-East Lincolnshire Local Plan had a housing requirement of 7,744 dwellings for Boston district and 11,681 for South Holland District to 2036 | | |
| | Flamborough Head to Gibraltar Point SMP<br>Gibraltar Point to Hunstanton SMP<br>East Lindsey Local Plan has a housing requirement of 9,620 dwellings to 2031 | Adopted Local Plan 2018 - East Lindsey District Council | SW_E1c_1_to_Lincs_CN (HNDFUE) |
| | Flamborough Head to Gibraltar Point SMP<br>Gibraltar Point to Hunstanton SMP<br>East Lindsey Local Plan has a housing requirement of 9,620 dwellings to 2031<br>South-East Lincolnshire Local Plan had a housing requirement of 7,744 dwellings for Boston district and 11,681 for South Holland District to 2036 | Adopted Local Plan 2018 - East Lindsey District Council<br>South East Lincolnshire Local Plan - South East Lincolnshire Local Plan | SW_E1c_2_to_Weston Marsh (HNDFUE) |

# Intra-project effects

This section has considered the impact pathways relating to the proposed study corridors to determine potential for in-combination effects to occur between routes.

As with inter-project effects, the assessment considers all potential impact pathways, including those screened out for individual cable routes considered not to result in LSE. While these impacts may not result in a LSEs in isolation, acting in-combination with impact sources from other cable routes the effects can be additive or synergistic, resulting in intra-project LSEs.

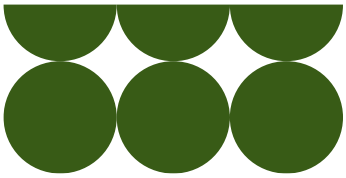
The following key groupings have been identified where multiple study corridors overlap, and/or interact with the same European sites. Thus, there is potential for significant effects on one or more European sites to occur. As proposed study corridors are located throughout most English and Welsh waters, the identified groupings are arranged by rough geographical regions (**Figure 8**):

**Peterhead congestion:**

- HND:
    - SW_NE7_ To_Peterhead; and
    - SW_NE4_to_New Deer (ES26).
- HNDFUE:
    -
    - SW_NE4_to_New Deer;SW_NE3_to_New Deer 2;
    - SW_NE6_to_Peterhead 2;
    - SW_NE8_to_Peterhead 1;
    - SW_NE7_to_Peterhead DCSS; and
    - SW_E2b_to_Peterhead 2.
- INTOG
    - Peterhead_to_Cenos;
    - Scaraben_to_Peterhead 2; and
    - Scaraben_to_Sinclair.

**Scottish North Sea offshore from Aberdeen:**

- HND:
    - SW_E1a_to_Lincolnshire Connection Node;

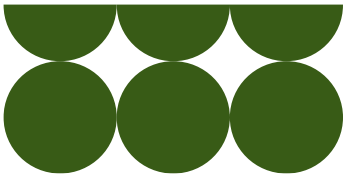


- PA_2_ to_Berwick_Bank;
- SW_E1a_to_Hawthorn Pit;
- SW_E1a to SW_E1b; and
- SW_E1a_to_Fiddes.

- HNDFUE:
  - SW_E2b_to_Peterhead 2;
  - SW_E2b_to_SW_E2a_1;
  - SW_E2a_1_to_SW_E2a_2;
  - SW_E2a_2_to_Near Richborough;
  - SW_E2a_2_to_SW_E1c_1;
  - SW_E1c_1_to_SW_E1c_2;
  - SW_E1a_to_SW_E1c_2;
  - SW_E1a_to_Branxton; and
  - SW_E3_to_Fiddes.
- INTOG:
  - Aspen_to_Fetteresso;
  - North Connect_to_Cenos;
  - Beech_to_Cedar;
  - Peterhead_to_Cenos;
  - Cedar_to_Aspen;
  - Cedar_to_Branxton;
  - SW_E1c_2_to_Weston Marsh; and
  - SW_E1c_1_to_Lincolnshire Connection Node.

**Southern North Sea offshore from Hull:**

- HND:
  - R4_3_to_Weston_Marsh;
  - SW_E1a_to_Lincolnshire Connection Node;
  - R4_1_to_Birkhill Wood;
  - PA_1_to_Birkhill Wood; and



    - R4_2_to_Birkhill Wood.

- HNDFUE:
    - SW_E2a_2_to_Near Richborough;
    - SW_E1c_2_to_Weston Marsh; and
    - SW_E1c_1_to_ Lincolnshire Connection Node.

**North Channel:**

- HND:
    - Kilmarnock South_to_Ballantrae;
    - SW_W1_to_Ballantrae; and
    - Ballantrae_to_Pentir.

Currently there are no confirmed designs or methodologies for each of the cable routes. As such, there is insufficient detail to be able to accurately assess the potential for intra-project effects to occur. Therefore, the identified groupings of study corridors should be treated as key areas of consideration during project-level design and assessment.

However, the same mitigation measures identified for the effects of corridors alone are likely to be appropriate for the same impacts from corridors operating cumulatively. For example, the potential for noise and visual disturbance has been identified for many corridors. Since no numerical modelling of disturbance thresholds has been possible for this HRA, it also means that no corridor has been dismissed because it falls below relevant noise thresholds. Therefore, the mitigation measures identified for noise and visual disturbance can be applied to address any cumulative noise impact that requires consideration. Moreover, some cumulative impacts may not arise if the corridors are not constructed simultaneously.

# 8. Conclusion

Conclusion



# Conclusion

The appropriate assessment phase of the HRA (Chapter 4 and 5) has reviewed the impacts arising from the corridors identified in HND, HNDFUE, INTOG and Celtic Sea. In advance of considering mitigation measures, it could not be concluded that there will be no Adverse Effects on Integrity of Site (AEoSI) on any European sites for any corridors. This is because of the inherent uncertainties that exist about future developments and the potential in-combination effects (**Section 7**). These uncertainties relate to several aspects such as:

- the detail of the corridor design process;
- the location and scale of actual development since this HRA has been based on 5 km corridors whereas the actual study corridors are likely to be tens of metres wide;
- the proposed technologies to be used;
- absence of information regarding the terrestrial continuation of corridors post-landfall; and
- the efficacy of some project-level mitigation options.

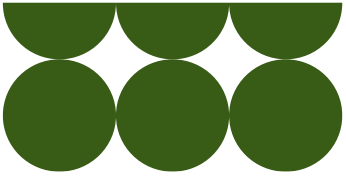
Recognising these uncertainties there is clearly a need for appropriate and meaningful mitigation measures to accompany HND, HNDFUE, INTOG and Celtic Sea. The following sections detail the plan-level mitigation required to conclude, with a high degree of certainty, that there will be no AEoSI on any European/Ramsar site arising from the plan, either alone or in-combination, with other known plans or projects. Details of decommissioning are not available, but it can be assumed based on current knowledge that the decommissioning impacts will be similar to the construction impacts. At a project level it will be necessary to review decommissioning impacts in detail at the time decommissioning is being contemplated, to take account of advances in technology at the time any planning application for decommissioning is submitted.

# Mitigation

Given the inherent uncertainties associated with HND, HNDFUE, INTOG and Celtic Sea, plan-level mitigation measures are required to ensure there is no AEoSI. One mitigation measure was identified as integral to the Draft Plan:

- The legal requirement for individual projects to undergo HRA. All future developments within the HND and HNDFUE corridors will be required to undergo an HRA and, wherever the possibility of a likely significant effect on a European site cannot be excluded, a project-level Appropriate Assessment will need to be completed.

It is important to confirm that this plan-level HRA will not be a substitute for project-level HRAs, where these are required for individual projects. Such project-level HRA processes will still be required in accordance with the legislation. Accordingly, the requirement for a project-level Appropriate Assessment, wherever there is possibility of a LSE, is an important



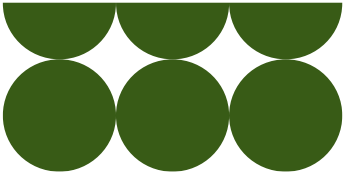
mitigation measure for the plan-level HRA to ensure there is no adverse effect on integrity of designated sites once there is the required level of certainty about development location(s) and design.

For individual cable projects a range of mitigation measures can be applied to help reduce or offset ecological effects where needed and these have been identified in the appropriate assessment and linked to particular European sites and corridors on a precautionary basis. All of these are relatively standard mitigation approaches that have been effectively deployed in many development contexts including marine and terrestrial electricity cable construction, maintenance and decommissioning. While the measures can be identified in broad terms for this HRA, their precise requirement, and their details, will need developing for each individual project application HRA and will be linked to specific survey and other investigations. Of these measures, an overarching consideration, and the one that is also most intuitive, is that during the early stages in the design of any development, 'a primary consideration will be to try to avoid habitats within a European/Ramsar site and minimise exposure and risk'. Given the corridors are 5 km wide, the appropriate assessment of HND and HNDFUE frequently identifies that there is potential for many impacts on European sites to be avoided entirely through either careful routing or careful location of the landfall. In many instances where the entire 5 km corridor traverses a European site at landfall, use of trenchless techniques has been identified as a potential solution. However, this should be considered a mitigation method rather than an avoidance technique as trenchless techniques can still have impacts on the European sites they pass beneath, depending on the sensitivities of the European site and construction details.

Therefore, while this list demonstrates the range of project-level mitigation measures that are available, they do not, by themselves, provide further certainty that any European/Ramsar site or features will not be affected. This is because they are not a formal requirement of the HND and HNDFUE plan and they are too generic at this stage to be assured that there will be no adverse effects as a result of their application. However, coupled with consideration in this HRA of whether there is room within each corridor to avoid particular European sites, the identified mitigation measures do give a strong indication as to whether the corridors identified in HND and HNDFUE have sufficient flexibility that it is likely to be possible to deliver each corridor at a project level without any adverse effect on the integrity of European sites.

It is recommended that a suite of environmental design principles is developed following adoption of the HND Implementation Plan that would be implemented at individual project stage to further limit impacts to the environment. These could include, but not limited to:

- Minimise environmental impact
- Avoid European sites that are avoided in the HND Implementation Plan
- Avoid sensitive features that are avoided in the HND Implementation Plan
- Reduce cable lengths
- Reduce external cable protection
- Reduce cable crossings



- Location of offshore infrastructure outside of European sites/sensitive features
- Consideration of sediment processes (to include any additional impacts from external cable protection)
- Avoid sensitive periods for European site features

Detailed mitigation measures at the project level can be set out within the design documents and alternatives assessment, but in particular in Registers of Environmental Actions and Commitments and Construction Environment Management Plans.

# Need to rely on derogations

For the pathway of direct benthic or intertidal habitat loss, the HRA has identified several corridors where there is a high likelihood that a reliance on the derogations in the HRA process (the tests of Imperative Reasons of Overriding Public Interest, No Alternatives and Compensation) would be required at the project level. **It can be seen from Table 27 below that four corridors –PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood, R4_2_to_Birkhill Wood and SW_N4_to_Arnish_(Lewis) – are considered likely to need to rely on derogations.**

**It is therefore strongly recommended in the first instance that NESO explores alternatives to these corridors before finalising HND and HNDFUE**. This is because, in order to pass the derogations tests, one of the first tests is that no alternatives exist to meet the need of the project.

Corridors PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood are related to wind farms within Dogger Bank SAC, and it is impossible to connect these wind farms without entering the site. The corridors will cross existing cables and/or pipelines, which increases the likelihood of need for cable protection, which would ultimately lead to loss of subtidal habitats qualifying as SAC features. Corridor SW_N4_to_Arnish_(Lewis) traverses Lewis Peatlands SPA/Ramsar for a distance of 10 km. Therefore, alternative routes should be explored for these corridors. If no alternatives are available, then HND will need to proceed to derogations for these corridors.

**Where no alternatives to corridors PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood, R4_2_to_Birkhill Wood and SW_N4_to_Arnish_(Lewis) are identified, it is considered that HND would need to proceed to derogations before it can be finalised or adopted, as set out in Section 3 of this report.**

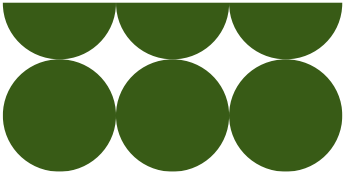
### Table 27: Corridors likely to need to rely on derogations

| Corridor number/name | European site screened in for this pathway | Ability to mitigate |
|---|---|---|
| PA_1_to_Birkhill Wood | Dogger Bank SAC | Currently, this design will cross approximately three cables/pipeline. Therefore, the likelihood of cable protection being needed on the seabed is |

| | | |
|---|---|---|
| | | high, thus losing qualifying sandbank feature of SAC.<br>The connection point within the European site is a wind farm the location of which is not determined by NESO and the location of which is now settled.. |
| R4_1_to_Birkhill Wood | Dogger Bank SAC | Currently, this design will cross approximately one cable/pipeline. Therefore, likelihood of cable protection being needed on the seabed is high, thus losing qualifying sandbank feature of SAC.<br>The connection point within the European site is a wind farm the location of which is not determined by NESO and the location of which is now settled.. |
| R4_2_to_Birkhill Wood | Dogger Bank SAC | Currently, this design will cross approximately three cables/pipeline. Therefore, likelihood of cable protection being needed on the seabed is high, thus losing qualifying sandbank feature of SAC.<br>The connection point within the European site is a wind farm the location of which is not determined by NESO and the location of which is now settled.. |
| SW_N4_to_Arnish_(Lewis) | Lewis Peatlands SPA/Ramsar | The entire width of SW_N4_to_Arnish_(Lewis) traverses this SPA for a distance of 10 km, which is likely to be too far for trenchless methods such as HDD to be possible (subject to review and confirmation in any project level HRA for a planning application). Moreover, the habitats in the SPA are hydrologically sensitive such that any HDD would need to be sufficiently deep it would not affect surface hydrology. It is therefore considered at the HND Implementation Plan level that it cannot avoid adverse effects on Lewis Peatlands SPA either due to direct habitat loss or indirect habitat loss through impacts on hydrology. |

# Project-Level HRA

Acknowledgment of this measure is based on a recognition that, as a matter of law, any new project for a study corridor identified in HND, HNDFUE, Celtic Sea and INTOG will be required to undergo a project-level HRA and to produce an Appropriate Assessment wherever the possibility of LSE on a European/Ramsar site cannot be excluded. Moreover, developers are not legally, spatially or technically bound by the corridors identified in HND, HNDFUE, Celtic Sea and INTOG so they could choose to deviate from those identified in the plan. Each individual project will need to review the baseline conditions and undertake work



in a manner that does not have an AEoSI, unless they can demonstrate to the satisfaction of the appropriate competent authority (permitting body) and appropriate authority (relevant Secretary of State or Administration) that the derogation tests already discussed can be passed. As part of this plan-level HRA, information has been provided to aid future project level Appropriate Assessments.

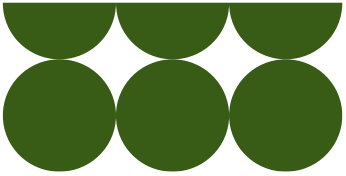
At plan level, many sites within the impact pathway screening distances (including those that overlap directly with the proposed cable corridors (e.g. Carmarthen Bay SAC)) are given an amber risk rating due to the fact that mitigation measures could be put in place to avoid adverse impacts on site integrity and features. However, this is not intended to prejudge the assessment of AEoSI at the project level, especially where there are uncertainties on route options and given that there will be site-based engineering constraints. Any technology or configuration change that materially alters environmental pathways, including HVAC phasing that increases cable numbers, trenches and landfalls relative to HVDC assumptions, should be screened promptly through the Impact Assessment or DCO process and taken through proportionate HRA refresh where necessary.

All future project-level down-the-line HRA work will need to be completed in the context of the latest scientific knowledge and evidence base (relating to the development of electricity cable routes) that is available at the time of the assessment. It will also need to be done to the satisfaction of the consenting body (as competent authority at the project stage), taking account of advice from statutory nature conservation bodies, and consultees where appropriate. The pursuance of project-level HRAs (with reference to the latest monitoring and scientific understanding) will be a legal requirement in all cases where likely significant effects cannot be excluded as will the application of project-level mitigation (where these are necessary to avoid adverse effects at project level). This work will provide assurances of no adverse effect from individual projects but will also improve understanding of the impacts from key pathways, with updated information fed back into the HRA process i.e. through subsequent applications. The information that will need to be supplied within the project-level HRAs includes:

- Updates on the location and status of new European designations;
- New information on interest feature sensitivities (in the context of the latest scientific understanding);
- Assessment of effects during survey, construction and operational phases of the project (including the in-combination effects with other plans or projects); and
- Proposed mitigation measures.

It should also be recognised that it may be necessary, as part of the project-level HRAs, to revisit the screening process that was undertaken for HND and HNDFUE. Depending upon the outcome of the project-level Appropriate Assessment there might be a need for mitigation measures to be implemented to ensure that there is no AEoSI. This process will also require project-level Derogations to be prepared for Development Consent Orders at project level.

Overall, it should be emphasised that uncertainties associated with the sensitivities of European site features to individual projects will be addressed through project-level HRA



(with the benefit of project specific information), to demonstrate no adverse effect on integrity of these features. The Habitats Regulations and the case-law that informs their implementation place great emphasis on developers demonstrating 'no adverse effect' using best available scientific knowledge and beyond reasonable scientific doubt.

# Overall conclusion

In the majority of cases, it can be concluded that the plan will not have an adverse effect on the integrity of any European sites alone or in combination with other plans or projects. This is partly due to the requirement for a down-the-line HRA for specific planning applications or Development Consent Orders when the fullest level of detail on each scheme is available. It is also partly due to the conclusion that it would be possible for most new cable routes to either avoid or adequately mitigate adverse effects on the integrity of European sites. the conclusion is based on the reasonable assumption that the mitigation measures and compensation identified will be secured by the Secretary of State in project level Development Consent Orders, where those mitigation measures remain appropriate following detailed scheme design. Finally, it is partly due to the fact that the plan is not legally, spatially or technically binding on developers and therefore does not force developers to utilise a corridor identified in the plan.

The exceptions are cable routes **PA_1_to_Birkhill Wood, R4_1 _to_Birkhill Wood, R4_2_to_Birkhill Wood**, and **SW_N4_to_Arnish_(Lewis)**. Corridors PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood are related to wind farms within Dogger Bank SAC, and it is impossible to connect these wind farms without entering the site. The corridors will cross existing cables and/or pipelines, which increases the likelihood of need for cable protection, which would ultimately lead to loss of subtidal habitats qualifying as SAC features. Corridor SW_N4_to_Arnish_(Lewis) traverses Lewis Peatlands SPA/Ramsar for a distance of 10 km. Therefore, alternative routes should be explored for these corridors. If no alternatives are available, then HND will need to proceed to derogations for these corridors.

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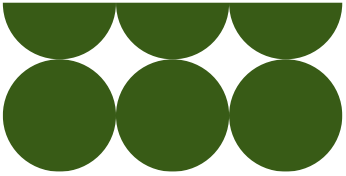
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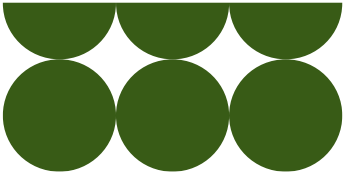
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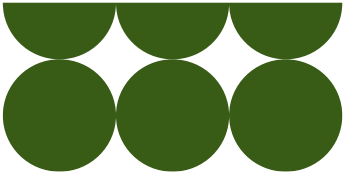
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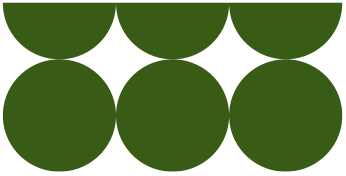
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# 9. Glossary



# Glossary

## Table 28: Glossary

| Acronym | Description |
|---|---|
| AC | Alternating Current |
| AEoSI | Adverse Effect on Site Integrity |
| BEIS | Business, Energy and Industrial Strategy |
| CCUS | Carbon Capture, Utilisation and Storage |
| CCGT | Combined Cycle Gas Turbine |
| CEMP | Construction Environmental Management Plan |
| CHP | Combined Heat and Power |
| CJEU | Court of Justice of the European Union |
| $CO_2$ | Carbon Dioxide |
| cSAC | candidate Special Areas of Conservation |
| CSZ | Core Sustenance Zone |
| dB | Decibel |
| DC | Direct Current |
| DCO | Development consent Order |
| DESNZ | Department of Energy Security and Net Zero |
| DLUHC | Department for Levelling Up, Housing and Communities and Local Government |
| DoL | Depth of Lowering |
| DP | Dynamic Positioning |
| EC | European Commission |
| EMF | Electromagnetic Field |
| EU | European Union |
| GW | Gigawatt |
| $H_2$ | Hydrogen |
| HDD | Horizontal Directional Drilling |
| HND | Holistic Network Design |
| HNDFUE | Holistic Network Design Follow-Up Exercise |
| HRA | Habitats Regulations Assessment |
| HSE | Health, Safety, and Environment |
| HVAC | High-Voltage Alternating Current |
| HVDC | High-Voltage Direct Current |
| IAMMWG | Inter-Agency Marine Mammal Working Group |
| IMO | International Maritime Organisation |
| INNS | Invasive Non-Native Species |
| INTOG | Innovation and Targeted Oil and Gas |
| IROPI | Imperative Reasons of Overriding Public Interest |
| IRZ | Impact Risk Zone |
| JNCC | Joint Nature Conservation Committee |
| km | Kilometre |
| kV | Kilovolt |

| Acronym | Description |
|---|---|
| LSE | Likely Significant Effect |
| m | Metres |
| MBES | Multi-Beam Echo Sounder |
| MD-LOT | Marine Directorate Licencing Operations Team |
| MLWS | Mean Low Wate Springs |
| MMMP | Marine Mammal Management Plan |
| MMMU | Marine Mammal Management Unit |
| MMO | Marine Management Organisation |
| mT | MilliTesla |
| MW | Megawatt |
| NESO | National Energy System Operator |
| NETS | National Electricity Transmission System |
| NFMS | National Marine Fisheries Service |
| NM | Nautical Mile |
| OHL | Overhead Line |
| OTNR | Offshore Transmission Network Review |
| PAD | Pressure-Activities Database |
| PAH | Polycyclic Aromatic Hydrocarbons |
| PDA | Project Development Area |
| pSPA | potential Special Protection Areas |
| PTS | Permanent Threshold Shift |
| RIAA | Report to inform Appropriate Assessment |
| SAC | Special Area of Conservation |
| SBP | Sub-Bottom Profiler |
| SEL | Sound Exposure Level |
| SCOS | Special Committee on Seals |
| SMU | Seal Management Unit |
| SOPEP | Shipboard Oil Pollution Emergency Plans |
| SPA | Special Protection Area |
| SPL | Sound Pressure Level |
| SSEP | Strategic Spatial Energy Planning |
| SSS | Side-Scan Sonar |
| SSSI | Site of Special Scientific Interest |
| TIGRE™ | Transition to integrated Gas and Renewable Energy |
| TTS | Temporary Threshold Shift |
| USBL | Ultra-Short Baseline |
| UXO | Unexploded Ordnance |
| ZoI | Zone of Influence |
| µT | Microtesla |



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