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Holistic Network Design Implementation Plan

Habitats Regulations Derogations Report

NESO
National Energy System Operator

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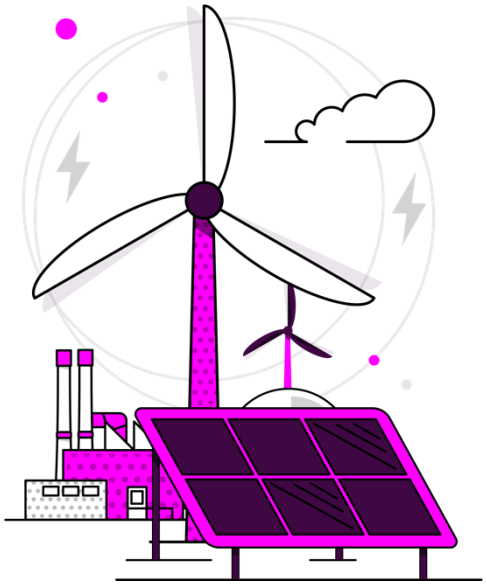

Executive Summary

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 NESOs 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 our 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 Team (OC) 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 53GW across 34 different projects of offshore wind across Holistic Network Design (HND), HND Follow Up Exercise (HNDFUE), Celtic Sea and INTOG (Collectively referred to as the HND Implementation Plan).

The Habitat Regulations Assessment for Offshore Coordination

A Habitat 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 Offshore Coordination carry out a 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 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 designated sites include 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 Offshore Coordination follows the process required by Scottish, English and Welsh HRA Regulations.

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

This Derogation Report

This document sets out the derogations test identified as being necessary as part of the Appropriate Assessment for the HND Implementation Plan.

In certain circumstances, a plan-making authority/competent authority can adopt a plan, notwithstanding the fact that the Appropriate Authority concludes it will have adverse effects on the integrity of a European site. This is known as a derogation. A plan must pass each of the following three sequential legal tests for a derogation to be granted.

- There are no feasible alternative solutions that would be less damaging to the European site while still meeting the objective of the plan or proposal.
- The proposal needs to be carried out for imperative reasons of overriding public interest.
- The necessary compensatory measures can be secured.

Since the tests are sequential, a study corridor that cannot meet a given test fails the derogations and therefore does not progress to the later tests. The Derogations Report concludes that for three of the study corridors (Route PA_1_to_Birkhill Wood, Route R4_1_to_Birkhill Wood and Route R4_2_to_Birkhill Wood, all of which connect to Wind Farms located within Dogger Bank and thus require traversing Dogger Bank SAC) it is likely that at the planning application level a robust Derogations case can be made, subject to the further detailed work that will inevitably have to be undertaken for the planning application.

Notably, for one corridor (PA_1_to_Birkhill Wood) the developer has identified a feasible alternative study corridor, which they intend to pursue. However, despite the alternative study corridor reducing the risk of needing cable protection compared to the original study corridor, derogations and compensatory provision would still be required.

Additionally, for another corridor (SW_N4_to_Arnish_(Lewis)) an alternative corridor has been considered but was concluded as not technically or financially viable. The original study corridor provides greater opportunities for the delivery of sufficient mitigation to avoid or reduce an adverse effect on the integrity on any European sites. Therefore, the original study corridor has been taken forward; with potential compensatory measures identified.

Derogation Report Next Steps

This Derogation Report is to be shared with the Department for Energy Security and Net Zero (DESNZ) in their role as 'Appropriate Authority' within the context of the Conservation of Habitats and Species Regulations 2017 (as amended), and other associated regulations.

1. Methodology

Introduction

Test 1 Consider Alternative Solutions

Test 2 Consider Imperative Reasons of Overriding Public Interest

Test 3 Compensatory Measures

Introduction

This document sets out the derogations test identified as being necessary as part of the Appropriate Assessment (AA) for HND Implementation Plan.

In certain circumstances, a plan-making authority/competent authority can adopt a plan, notwithstanding the fact that the AA concludes it will have adverse effects on the integrity of a European site. This is known as a derogation. A plan must pass each of the following three sequential legal tests for a derogation to be granted.

- There are no feasible alternative solutions that would be less damaging to the European site while still meeting the objective of the plan or proposal.
- The proposal needs to be carried out for imperative reasons of overriding public interest.
- The necessary compensatory measures can be secured.

Since the tests are sequential, a study corridor that cannot meet a given test fails the derogations and therefore does not progress to the later tests.

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. A plan is an intentionally higher-tier document that by design does not present all the details for a particular proposal, or all the investigation work that will be developed as detailed design proceeds. It leaves flexibility for design of a subsequent planning application including as regards avoidance, mitigation and compensation of adverse effects on a European site. In contrast, once planning permission is granted there is no further tier in the planning approval process other than discharge of conditions. As such all matters regarding the derogations including compensation must be fully detailed at the time planning consent is granted.

HRA is required at both the plan-making stage and the planning application stage. However, this tiered approach to the level of detail required at each stage reflects Advocate-General Kokott's 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 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'*[1].

[1] Opinion of Advocate General Kokott, 9th June 2005, Case C-6/04. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland, paragraph 49. http://curia.europa.eu/juris/document/document.jsf?docid=58359&doclang=EN

At the plan-making stage, the decision maker must be satisfied that the derogation tests are met at the strategic plan level and are capable of being met at the project level.

In light of this, the duty on NESO as the Competent Authority for this plan is to be satisfied that, the derogations tests have been adequately appraised, and where necessary, compensation is achievable in principle and likely to be achievable and effective in practice.

Test 1 Consider alternative solutions

To allow a derogation the plan making authority must decide that there is no alternative solution that would be less damaging to the site while still meeting the objective of the plan. The plan making authority should consider whether the proposal could:

- be delivered at a different location
- use different routes across a site
- change its scale, size, design, method or timing

To constitute a genuine alternative solution, the alternative must:

- achieve the same overall objective as the original proposal
- be financially, legally and technically feasible
- be less damaging to the relevant European site and not have an adverse effect on the integrity of any other European site

If there are, or appear to be, one or more alternative solutions, the plan making authority cannot include the original proposal within the plan. In those circumstances, there is no need to do test 2 or test 3.

If there are no alternative solutions, the proposal passes test 1 and the plan making authority can move to test 2.

Test 2: 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 (IROPI) why the proposal must go ahead. The plan making authority must decide if the need for the proposal is:

- imperative - it is essential that it proceeds

- in the public interest – it delivers a public interest benefit, not just benefits for private interests
- overriding - the imperative public interest outweighs the harm, or risk of harm, to the integrity of the European site that is predicted by the appropriate assessment.

According to government guidance[2], 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 or projects.

Some of the designated habitats and species of SACs are considered to be a Europe-wide 'priority habitats' in danger of disappearance, as defined in the Habitats Directive. Where such priority habitats are at play, there is a stricter test applied at the IROPI stage. However, there are no such designated habitats in affected European sites that require derogations for the HND Implementation Plan.

Test 3: 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 suitable compensatory measures are capable of being secured at the planning application stage. Such measures will need to fully offset the harm to coherence of structure and function (effect on integrity) which will or could be caused to the site.

While there is no precedent in the UK for the National Energy System Operator (NESO) to have relied on derogations in the adoption of a nationwide plan such as the HND Implementation Plan, this is because such plans are novel. However, there is considerable precedent within the realm of coastal defence, where it is common for Shoreline Management Plans and Coastal Strategies to rely on the derogations. In these and similar examples the focus at the plan-making stage is to ensure that there is scope for suitable compensatory provision. This includes regarding its scale, its technical feasibility, and the likelihood that adequate areas for compensation can be identified. The precise details of the specific compensation parcels to be secured, and technical matters such as landowners agreements, are deferred to the individual scheme (planning application) level.

This report therefore seeks to explore whether a sufficient framework exists to ensure that suitable compensation is capable of being delivered when and where it is needed, and that there is a high degree of confidence that sufficient land in appropriate places will be available for the compensation to be delivered.

Following public consultation, the derogations documentation will be finalised and submitted to the 'appropriate authority' (the relevant Secretary of State) in line with Regulation 107 of the Habitats Regulations, which provides that the appropriate authority

[2] https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site#derogation

has 21 days to prohibit adoption of the plan, based on the derogations materials. The appropriate authority may do this either indefinitely or during such period as may be specified in the direction.

2. Alternative Solutions

Introduction

Study Corridor SW_N4_to_Arnish_(Lewis)

Study Corridor PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood

Introduction

Consideration of alternative solutions is required at both the strategic planning and project level. At the project level, the consideration of alternative solutions will necessarily have to explore the alternative approaches to delivery of cable routing or construction methods in more detail. Alternative solutions are discussed here at the strategic planning level and in relation to the objective of connecting the consented or proposed offshore windfarms with onshore substations or converter stations, and thus with the onshore electricity supply network.

SW_N4_to_Arnish_(Lewis)

Study corridor SW_N4_to_Arnish_(Lewis) will link Spiorad na Mara offshore windfarm[3] west of the island of Lewis with a substation in the vicinity of Stornoway on the eastern side of Lewis. The project is still in development, with the second phase of public consultation taking place in July 2025. Therefore, there is little environmental survey or assessment information in the public domain. The first part of this analysis considers the alternative ways of crossing Lewis Peatlands SPA/Ramsar site with a cable. The three general ways a cable could traverse land are through open cut trench, overhead line, or trenchless methods such as Horizontal Direct Drilling (HDD).

Open cut trench

The A857 road lies within the centre of the study corridor. There is therefore the potential for the cable to be laid entirely within the carriageway, thus avoiding any habitat loss from the SPA/Ramsar. However, the road is approximately 9m wide and SPA habitat is present immediately up to the roadside. The carriageway is therefore probably too narrow for the cable construction width to be located entirely within its boundary. Based on other buried high voltage powerline projects, a minimum onshore cable construction swathe of 20m is more typical. Moreover, the hydrological sensitivity of adjacent habitats can be seen from the pools and drains either side of the road. Even construction in the road corridor could potentially affect sub-surface hydrology in the adjacent habitat. Therefore buried cabling would be likely to have an adverse effect on the integrity of the SPA. Any habitat loss would therefore clash with the conservation objectives of the SPA which include '*To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained*'.

[3] Spiorad na Mara – Northland Power ScotWind

Overhead line

A high voltage powerline could be achieved through overhead line rather than buried cable. However, overhead lines may not be a feasible alternative mechanism for delivering this study corridor given the site is designated for birds such as golden eagle, merlin, nesting black throated diver and nesting red throated diver. These are all at higher than normal risk of collision risk particularly in an environment with few overhead power lines. Moreover the breeding red throated diver population of this SPA is classed as 'unfavourable declining'. Any collision risk would therefore clash with the conservation objectives of the SPA which include '*To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained'.* There does appear to be a line of short posts along the roadside, but these may be either telegraph posts or a low voltage powerline. It is likely that a high voltage powerline would require significantly taller pylons and would therefore change the potential collision risk in a landscape with few such intrusions.

Trenchless methods

Trenchless methods are a possible alternative for installing a high voltage powerline through Lewis Peatlands SPA/Ramsar. This approach would require a launch compound and receiving compound at either end but would avoid direct habitat loss from the SPA/Ramsar, except for a series of small kiosks on the surface at the junction between sections of cable. However, Horizontal Direct Drilling generally cannot be used on land to cover distances greater than c. 3km maximum (often less). To cross Lewis Peatlands SPA/Ramsar would be a distance of approximately 11km. Therefore, Horizontal Direct Drill or similar methods such as pipe-jacking are not considered technically feasible alternatives throughout the entirety of the route. However, there are some sections where trenchless installation could potentially be included to reduce the amount of habitat loss from open cut trench.

Alternatives to traversing Lewis Peatlands SPA/Ramsar

This section considers whether there is a viable alternative to traversing Lewis Peatlands SPA/Ramsar site at all. Consideration has been given to a study corridor that would avoid going through Lewis Peatlands SPA/Ramsar. This would involve an entirely marine study corridor around the north of the Isle of Lewis.

While the Inner Hebrides and Minches SAC, designated for its population of harbour porpoise, may be traversed by this alternative study corridor, only a small part of the SAC would be affected, and there is already another study corridor (SW_N3_to_Arnish_(Lewis)) that would traverse the same SAC. The HRA identified that a study corridor through that SAC is much more likely to be able to deliver sufficient mitigation (through measures such as construction methods, routing and timing of construction) to avoid an adverse effect on integrity of any European sites.

Furthermore, any alternative study corridor around the island would be approximately 95km longer than the study corridor across Lewis Peatlands SPA/Ramsar. It would also require a reactive compensation platform between the wind farm and the substation. This

would increase the complexity and cost (potentially doubling the cost) of this element of the project to such an extent that it would be prohibitive to the feasibility of the SW_N4 wind farm being developed further. As a result, this is not considered a technically or financially viable alternative. No other alternatives that would not involve traversing Lewis Peatlands SPA/Ramsar have been identified.

PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood

These three study corridors will each connect one of three offshore wind farms located within Dogger Bank to the onshore transmission network in the vicinity of Birkhill Wood in East Riding of Yorkshire. All three of the Dogger Bank windfarm developments are located within Dogger Bank SAC; therefore, the connecting cables must also be within Dogger Bank SAC. These cables are most likely to be installed by placing the cable on the seabed within the SAC. Where there are no other cables to be crossed it is possible to bury new cables at a sufficient depth (typically 1.5 - 2m) for sandbank habitat to re-establish.

However, where the new cables cross existing cables it is usually impossible to bury the cables at a sufficient depth. In those situations, it is necessary to use concrete mattress or rock protection to cover the cable at these points. All three study corridors (PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood) cross approximately three existing pipelines or cables within Dogger Bank SAC and the risk of needing cable protection is therefore high. It is this that has led the HRA to conclude an adverse effect on SAC integrity cannot be dismissed for this plan, as cable protection would constitute permanent loss of SAC habitat. In addition, Horizontal Direct Drill or similar methods are not technically feasible alternatives in the marine environment.

For PA_1_to_Birkhill Wood, the developer has identified an alternative study corridor they intend to pursue, which deviates from that contained within the plan (see Figure 1, below). The alternative study corridor heads north-west (using the windfarm as the starting point) and around the western boundary of the Dogger Bank SAC. This would still mean the potential need for cable protection within the SAC but the study corridor through the SAC to the windfarm would be shorter, being approximately 61 km. This means the risk of needing cable protection is reduced compared to the original study corridor included in the HND Implementation Plan. Given the alternative route would potentially be less harmful to the SAC, it should be included in the HND Implementation Plan in place of the original study corridor. However, since it would still traverse the SAC it does not remove the need for cable protection (unless this is confirmed by the developer for their planning application). Therefore, derogations and compensatory provision would still be required as discussed in the following text; only the extent of habitat affected (and thus

compensation) would vary from that discussed below. However, those numbers are estimates in any case and subject to revision for planning applications. The other two study corridors, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood, are already considered to take the shortest distance to the windfarm connection point through the SAC.

It is therefore concluded that there are no alternatives to delivering study corridors within the SAC. Even if the precise alignment within the SAC were changed these would all still result in potential permanent loss of SAC habitat. The end points within the SAC are fixed by the windfarms, such that the distance of SAC that must be traversed cannot be reduced or amended as part of this plan.

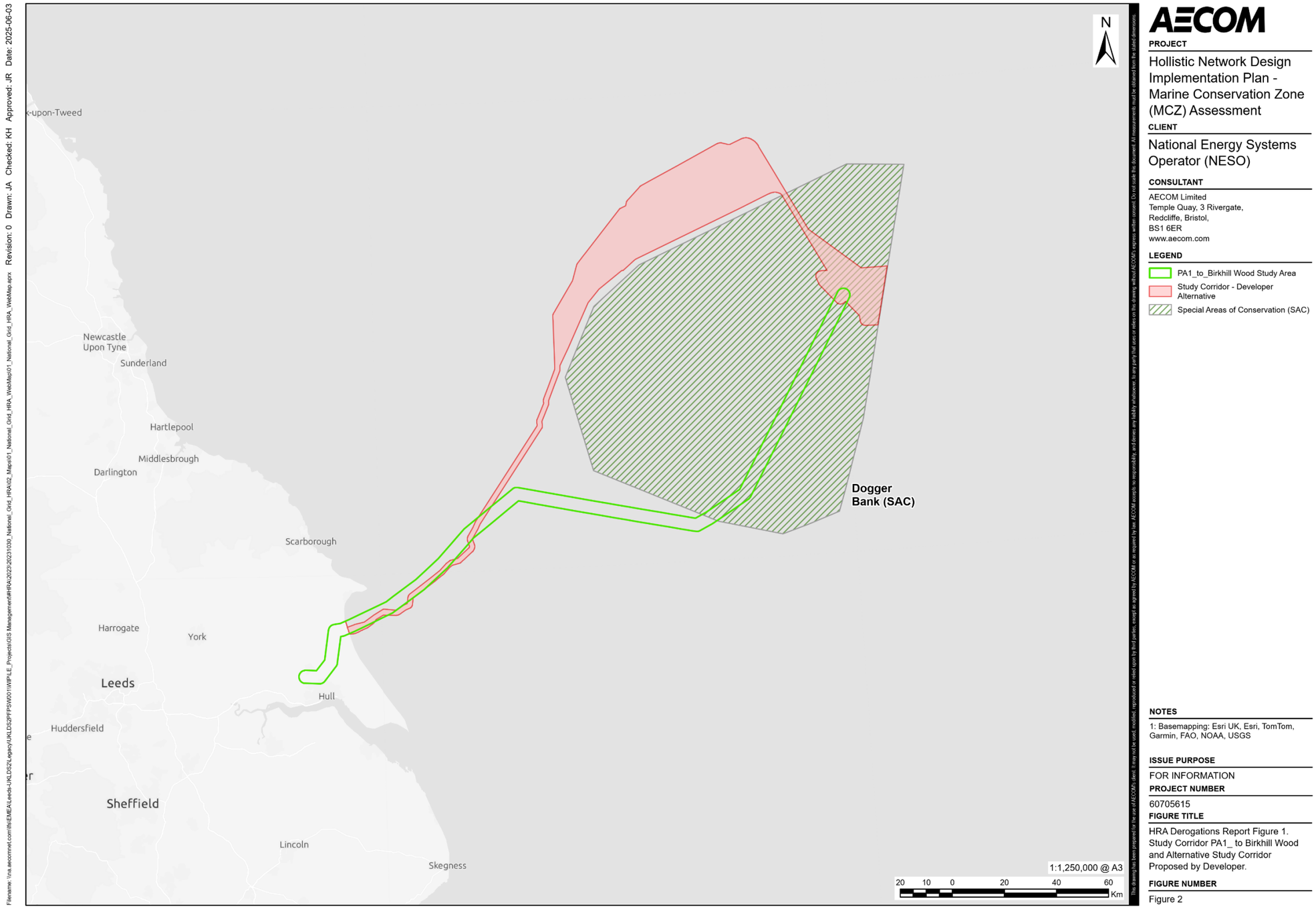

Figure 1 Study Corridor PA_1_to_Berkhill Wood and Alternative Study Corridor Proposed by Developer

3. Imperative Reasons of Overriding Public Interest

Introduction

'Imperative' and 'In the Public Interest'

The Overriding Balance

Introduction

This section of the report discusses Imperative Reasons of Overriding Public Interest.

As discussed earlier in this report, the plan making authority must decide if the need for the proposal is:

- imperative - it is essential that it proceeds
- in the public interest – it delivers a public interest benefit, not just benefits for private interests
- overriding - the imperative public interest outweighs the harm, or risk of harm, to the integrity of the European site that is predicted by the appropriate assessment.

'Imperative' and 'in the public interest'

All of the UK must meet net zero by 2050, in line with a target set out in legislation[4] notably the Climate Change Act 2008. The Act makes it the duty of the Secretary of State to reduce net greenhouse gas emissions. The act gives ministers powers to introduce the measures necessary to achieve a range of greenhouse gas reduction targets. The original target was an 80% reduction by 2050 but in June 2019 this was strengthened to a "net zero" target of 100% reduction. The government published its revised plan for meeting the UK's net zero target, the Carbon Budget and Growth Delivery Plan, on 29 October 2025. This plan sets out how the government would meet the emissions reductions for carbon budgets four to six (2023 to 2037).

The National Policy Statement for Electricity Networks Infrastructure[5] states that '*The security and reliability of the UK's current and future energy supply is highly dependent on having an electricity network which will enable the new electricity generation, storage, and interconnection infrastructure that our country needs to meet the rapid increase in electricity demand required to transition to Clean Power by 2030 and net zero, while maintaining energy security.*

A significant amount of new network infrastructure is required in the near term to directly support the government's ambition to meet our Clean Power 2030 Mission. The Clean Power 2030 Action Plan sets out pathways for meeting targets in 2030 that will facilitate the achievement of net zero by 2050.

[4] https://commonslibrary.parliament.uk/research-briefings/cbp-9888/
[5] National Policy Statement for Electricity Networks Infrastructure (EN-5) – December 2025

The electricity network infrastructure to support the government's Clean Power 2030 Mission is as important as the generation infrastructure. Without the development of the necessary networks to carry low carbon power to where it is needed in the UK, the Clean Power 2030 Mission cannot be achieved

… government has concluded that there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure. This includes: for electricity grid infrastructure, all power lines in scope of EN-5 including network reinforcement and upgrade works, and associated infrastructure such as substations'.

Net zero means that the total greenhouse gas emissions would be equal to the emissions removed from the atmosphere, with the aim of limiting global warming and resultant climate change, which could have a devastating effect on global wildlife and humanity if uncontrolled. Offshore wind has been identified by the UK government as a nationally critical technology in achieving net zero greenhouse gas emissions by 2050[6]. To help realise this target, a step-change in both the speed and scale of deployment of offshore wind is required. One of the challenges to delivering the ambition for offshore wind deployment in the timescales required will be making sure that the offshore and onshore transmission network enables this growth in a way that is efficient for consumers and takes account of the impacts on communities and the environment.

The Department for Energy Security and Net Zero (DESNZ) requested that NESO deliver a Holistic Network Design (HND) for a coordinated onshore and offshore network. The HND supports the government ambition for 50 gigawatts (GW) of offshore wind by 2030 for Great Britain, including 11 GW by 2030 for Scotland (Scottish Government target), as well as contributing to the Sixth Carbon Budget targets for 2035 and net-zero by 2050 for Great Britain and by 2045 for Scotland (Scottish Government target).

As part of Phase 3 of the project, NESO considered additional offshore wind farms in Scotland and in the Celtic Sea. The HND Implementation Plan further supports the Government's previously stated government targets for offshore wind and net zero. The HND Implementation Plan will facilitate an economic, efficient, operable, and coordinated National Electricity Transmission System (NETS) (including offshore and associated onshore assets required to connect in scope projects).

It is therefore clear that delivery of HND Implementation Plan generally is both 'imperative' and of public (rather than private) interest. The rest of this section discusses the IROPI cases for the specific study corridors that require derogation.

Study corridor SW_N4_to_Arnish_(Lewis)

This study corridor is of imperative public interest because it will connect the Spiorad na Mara offshore windfarm with a substation in the vicinity of Stornaway. Without this connection Spiorad na Mara, which will provide power to 1.2 million homes, would not be able to connect to the necessary onshore infrastructure thus significantly affecting the probability of achieving the Scottish Government target of Net Zero by 2045 or the Great

[6] https://www.gov.uk/government/publications/offshore-wind-net-zero-investment-roadmap/offshore-wind-net-zero-investment-roadmap

Britain target of Net Zero by 2050. This would in turn undermine the Scottish Government's and British parliament's work to address climate change. Therefore, this route is both imperative and of public (rather than strictly private) interest.

Study corridors PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood

These three study corridors are of imperative public interest because they will connect the three Dogger Bank offshore windfarm developments to the onshore transmission network in the vicinity of a new substation at Birkhill Wood in East Riding of Yorkshire. These wind farms comprise: Dogger Bank D, Dogger Bank South East and Dogger Bank South West – located between 130km and 190km from the North-East coast of England at their nearest points. Collectively Dogger Bank will become the world's largest offshore wind farm[7].

Offshore construction of Dogger Bank wind farm began with earlier phases (A, B and C) in 2022 with contractors using specialist vessels to install the offshore infrastructure, beginning with the monopile turbine foundations. The first converter station platform, for Dogger Bank A, was installed in April 2023, followed by the second platform in Dogger Bank B in April 2024. Dogger Bank C platform is planned to be installed in 2025. The first wind farm phase, Dogger Bank A[8], is expected to be operational the same year. Each phase will have an installed generation capacity of 1.2GW. Combined, they will have an installed capacity of 3.6GW and will be capable of powering up to 6 million homes annually. Dogger Bank South East and South West have combined capacity for over 3 million homes from up to 200 wind turbines. Dogger Bank D will further add to the number of new homes served with renewable energy, with a capacity increase of 2 gigawatts[9].

Offshore wind farms have two distinct offshore cable requirements, the first being the 'inter-array' cable network within the wind farm itself and the other being the subsea 'export' cables which bring the generated electricity from the wind farm to shore. It is the export cables that will be within the study corridors identified in this plan.

Without the cable connections to the mainland, the three additional phases of Dogger Bank windfarm (D, South East and South West) would not be able to connect to the necessary onshore infrastructure thus significantly affecting the probability of achieving the government target of 50 GW of offshore wind by 2050 and in turn undermining the government's work to address climate change. Therefore, all three of these study corridors are both imperative and of public interest.

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[7] https://doggerbank.com/
[8] https://doggerbank.com/wp-content/uploads/2020/06/Habitats-Regulations-Assessment.pdf
[9] https://urldefense.com/v3/__https:/www.thecrownestate.co.uk/our-business/marine/capacity-increase-programme__;!!NPmo!i-wAlFNeuwHcHcsGYq5Dk4lkFHtqEcbzZiHwcpBWcQDNYNXdI9egTQNAlm2KH_6BiVVeHX5do15sRmyW-bxIk58jaihfh2TJ23qU$

The Overriding Balance

Consideration of IROPI necessarily involves a balancing exercise for the decision-maker. It is necessary for the 'Competent Authority' namely NESO[10], to consider if the imperative reasons and public benefits put forward override the anticipated harms identified. Advocate General Kokott in Case C-239/04 described the exercise as a balancing exercise: "*The necessity of striking a balance results in particular from the concept of 'override', but also from the word 'imperative'. Reasons of public interest can imperatively override the protection of a site only when greater importance attaches to them. This too has its equivalent in the test of proportionality, since under that principle the disadvantages caused must not be disproportionate to the aims pursued.*" [11]

The overriding balance is thus a matter of judgement to be conducted by weighing the imperative reasons of public interest against the identified adverse effects on the integrity of the relevant European sites. That is the purpose of this section of the report.

Study corridor SW_N4_to_Arnish_(Lewis)

Lewis Peatlands SPA is designated for its breeding populations of black-throated diver (*Gavia arctica*), dunlin (*Calidris alpina schinzii*), golden eagle (*Aquila chrysaetos*), golden plover (*Pluvialis apricaria*), greenshank (*Tringa nebularia*), merlin (*Falco columbarius*) and red-throated diver (*Gavia stellata*). This SPA is believed to have the largest population of golden plover, at the highest densities, of any British SPA. The same seven breeding bird species are also a reason for Ramsar designation. The Ramsar site is also designated for its blanket bog habitat, but that habitat is confined to the areas contained within the Lewis Peatlands SAC designation, which is not subject to an adverse effect on integrity and therefore does not require derogation. Therefore, it is only the effect on some SPA and Ramsar birds, through loss of their breeding and foraging habitat, which require derogation.

There are no published Conservation Objectives for Ramsar sites. The published Conservation Objectives for Lewis Peatlands SPA are:

- To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and
- To ensure for the qualifying species that the following are maintained in the long term:
    - Population of the species as a viable component of the site

[10] Through consultations with DESNZ it is understood that NESO are the Competent Authority, in this case. This is currently pending confirmation through legal discussions.
[11] https://curia.europa.eu/juris/document/document.jsf?text=&docid=56397&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=11738122

- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

The golden plover and red throated diver populations of the SPA are identified as being in unfavourable declining condition according to information from NatureScot[12]. The other five species for which the SPA is designated are identified as being in favourable condition. The Lewis Peatlands comprise an extensive area of deep blanket bog, interspersed with bog pool complexes and freshwater lochs, covering the main part of Lewis. Grazed, poor-quality grassland also occurs within the SPA with heather (*Calluna vulgaris*) dominant on the coast. Overall, the continuous and largely unfragmented extent of the peatland is a striking feature of the area. Black-throated diver and red throated divers feed in open water and breed on small inland lochs on Lewis. The scheme could be designed to avoid any loss of these features. However, the other SPA species cannot be ruled out as using habitat within the study corridor that would be affected.

Delivery of study corridor SW_N4_to_Arnish_(Lewis) overrides the protection of this SPA/Ramsar for two reasons: firstly because of the very small proportion of the SPA that would be affected, and secondly because of the fact that if buried cable is used, then habitat with some functional value to SPA birds could be restored above the cable route, even though the quality of that habitat is likely to be reduced from that which was the case prior to works. On a localised scale this would contravene the conservation objective to *'avoid deterioration of the habitats of the qualifying species'.*

Lewis Peatlands is a very large SPA measuring 58,960 ha in area. A typical onshore construction corridor width of 20m (based on other electricity cable projects) would result in a total construction footprint of approximately 22ha, equivalent to 0.04% of the SPA. Even allowing for one or more construction compounds having to be situated within the SPA as a worst-case, this would still likely involve loss of SPA equivalent to less than 0.05% of the total area. For context, approximately 3% of the SPA is already classified as 'Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)' according to the JNCC Natura 2000 Data Sheet[13]. Moreover, based on available data there is no indication that the area which would be affected by the construction corridor is notably more important to the integrity of the SPA than other locations within the SPA. In fact, subject to further studies it may prove to be of lower quality and importance since there is already a road and a section of low-voltage overhead powerline within the corridor.

Moreover, the cable trench could be buried and the habitat restored as turves leaving little visible infrastructure. Studies would be required as part of detailed project design to minimise any hydrological effects arising on adjacent habitat from the buried cables. Moreover, in practice it may be possible to micro-route the cable to avoid the most

[12] https://informatics.sepa.org.uk/ProtectedNatureSites/
[13] https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9001571.pdf

sensitive habitats and habitat fragmentation and further avoiding / mitigating adverse effects. Since this cannot be resolved at the plan level, the derogations case is being made on the assumption some localised permanent hydrological effect, and thus habitat degradation, may arise around the cable trench. The small and localised scale of any adverse effect on integrity of Lewis Peatlands SPA/Ramsar means that the aims of delivering study corridor SW_N4_to_Arnish_(Lewis) are not disproportionate to the harm caused to the SPA/Ramsar. It is therefore considered that the delivery of study corridor SW_N4_to_Arnish_(Lewis) overrides the protection of the SPA/Ramsar.

Study corridors PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood

Dogger Bank SAC is designated for sandbanks which are slightly covered by sea water all the time (i.e. subtidal sandbanks). The Conservation Objectives of the SAC are: '*For the feature to be in favourable condition thus ensuring site integrity in the long term and contribution to Favourable Conservation Status of Annex I Sandbanks which are slightly covered by seawater all the time.*

This contribution would be achieved by maintaining or restoring, subject to natural change:

- *The extent and distribution of the qualifying habitat in the site;*
- *The structure and function of the qualifying habitat in the site; and*
- *The supporting processes on which the qualifying habitat rely.'*

The SAC has a restore objective for 'extent and distribution' of SAC habitat. The potential use of rock armour in the SAC would be contrary to this objective and would in turn affect the restore objective for 'structure and function'. It would therefore be an adverse effect on integrity. In consultation over this Derogations Report, JNCC commented that '*the 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 achieve favourable conservation status, all marine industry activities should be managed by reducing and removing the pressures that impact the feature'.*

The Supplementary Advice on Conservation Objectives for the SAC states that '*The introduction of infrastructure and some protective materials e.g., concrete mattresses, results in changes to substratum, such as from sedimentary to hard substrate, and consequently changes to sandbank communities such that these areas no longer represent the sandbank feature as defined… A significant amount of offshore wind farm turbines and associated cabling is proposed within the site which will continue to change the substratum across the site due to the introduction of hard substrata placed for offshore wind farm cabling and scour protection. This is a long term impact for the lifetime of the wind farm, which may range from 20-65 years (as stated in the Crown Estate Round 4 Habitats Regulations Assessment).'*

Delivery of study corridors PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood, and R4_2_to_Birkhill Wood override the protection of this SAC because of the very small

proportion of the SAC that would be affected relative to both the large size of Dogger Bank SAC, and the large contribution Dogger Bank wind farm will make to the achievement of the legally binding target of net zero by 2050. As identified earlier in this document, the three additional phases of Dogger Bank windfarm will be capable of powering well over 3 million homes annually.

In contrast, the analysis for this plan suggests that the amount of cable protection that may be required within the SAC from the three study corridors is likely to be approximately 0.001% of the total area of Dogger Bank SAC. The actual area of cable protection required will differ on a case-by-case basis and cannot be confirmed for this assessment (although it will be for subsequent planning applications); however, it is common for the protection required at each crossing to be no greater than 750 m in length and 10 m wide, resulting in an area of 0.75ha of potential habitat loss for each crossing. For this HND Implementation Plan HRA it has been identified that approximately three crossings are required for each corridor. This would total approximately 6.75ha of cable protection and thus permanent habitat loss within the SAC. The Development Consent Order applications for Dogger Bank South East and South West[14] include a derogations assessment that identifies a maximum area of export cable protection within Dogger Bank SAC of approximately 8.7ha. Therefore, as a precaution the amount of export cable protection for all three new wind farms (including Dogger Bank D) may be in the region of 16ha[15].

This does need to be considered cumulatively with the habitat loss due to other aspects of the wind farm. An example of the extent of this can be gained from Dogger Bank A, where the inter-array cabling has already been consented. In July 2024, inter-array cable laying was completed within the Dogger Bank A zone. More than 328 km of inter-array cables were installed, which included 1.0 km^2 (100 ha) of inter-array cable protection[16, 17], equivalent to 0.008% of the SAC. For Dogger Bank South East and South West the applicant in their DCO derogations case has identified a total habitat loss from Dogger Bank SAC of approximately 182ha. Therefore, the total amount of cable protection or other habitat loss from the SAC for all three new wind farms would still amount to less than 0.1% of the SAC. It is therefore considered that the delivery of the study corridors and associated windfarms would override the harm caused to the SAC.

[14] https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010125/documents?searchTerm=Habitats&itemsPerPage=50

[15] The Marine Management Organisation Derogations Case for Dogger Bank D identifies total losses of habitat from Dogger Bank SAC at approximately 223ha (page 33) but this includes the turbines themselves and the cables connecting the windfarms, not just the export cable. See: https://www.datocms-assets.com/136653/1746699660-cip-appropriate-assessment-and-derogation-case.pdf

[16] https://doggerbank.com/construction/offshore/

[17] Royal Haskoning DHV (2014) Environmental Statement Chapter 12 – Marine and Intertidal Ecology. [Online] Available at: https://doggerbank.com/wp-content/uploads/2021/11/Chapter-12-Marine-and-intertidal-ecology_Part1.pdf

4. Compensation

Introduction

Study corridor SW_N4_to_Arnish_(Lewis)

Study corridors PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood

Introduction

Regulation 109 of the Conservation of Habitats and Species Regulations 2017 (as amended) requires the appropriate authority to secure that any necessary compensatory measures are taken to ensure the overall coherence of the national site network.

Corridor SW_N4_to_Arnish_(Lewis)

Compensation for the adverse effects on integrity from delivery of buried cable within this study corridor would most likely involve enhancing or restoring approximately 30ha of habitat (based on the approximate calculations undertaken at this HND Implementation Plan level) for foraging dunlin, golden eagle, golden plover, greenshank and merlin associated with the SPA and/or Ramsar.

This could be undertaken within the boundary of the SPA, particularly in some of the 3% (approximately 1,700ha) of the SPA that does not currently constitute functional SPA habitat according to the Natura 2000 Data Form for the SPA. This could consist of restoring areas of 'waste places, mines, and industrial sites' to functional moorland.

It could also involve works to re-wet, or restore adequate grazing, to areas of the SPA that are currently degraded, to render them suitable for breeding golden plover. It could also involve removal of forested areas on Lewis outside the SPA to increase the total area of foraging and breeding habitat for golden eagle and merlin prey, and nesting and foraging habitat for golden plover, greenshank and dunlin.

It is not possible to provide further information on potential compensation options without detailed design, which will only be undertaken at the planning application level. However, it is possible to state with confidence that there is sufficient degraded or unfunctional land within the SPA/Ramsar, and land on Lewis beyond the SPA/Ramsar boundary, that compensation for adverse effects on integrity would be possible.

Corridors PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood

It must be acknowledged that the HND Implementation Plan occupies the top tier of the planning hierarchy. No subtidal sandbank loss will actually occur due to the adoption of the plan; rather it will arise as a result of individual schemes being consented and

delivered. This consenting process for individual schemes is not a matter for NESO but for the relevant consenting authorities (whether The Planning Inspectorate, Marine Management Organisation, Scottish Government, Welsh Government or another body). Those bodies will be required to produce their own HRAs, including derogation assessments as necessary, before any individual schemes can be consented.

The assessment process of these consenting bodies is legally independent of anything undertaken for the plan. The applicant for each scheme is required to provide the consenting authority with the information required[18] to make their decision. However, the applicant will not be NESO but the individual developers. Therefore, the primary onus of identifying and delivering adequate compensation is on each cable scheme at the design and delivery stages. Due to the lack of detailed information available at this time for the individual cable schemes coming forward (by design, as the plan must precede them unless they have already been consented prior to the plan being published), any precise identification of compensatory habitat for cable protection is inherently limited. For example, the precise locations and extents of cable protection can only be determined during detailed design.

Similarly, it is not possible at the plan level to provide details of financing, monitoring or enforcement, partly because none of these will be determined by NESO either as applicant or consenting authority. At the plan-making stage, the duty on NESO as the Competent Authority for this plan is to be satisfied that compensation is achievable in principle and likely to be achievable and effective in practice.

According to the Supplementary Advice on Conservation Objectives (SACO) for Dogger Bank SAC: *'The removal of infrastructure will have a temporary impact on the site and may result in some local restoration of the sandbank due to recolonisation of sandbank communities where the original substrate is exposed. This will increase the extent of the sandbank feature, as more of the original sandbank substrate becomes available for colonisation by sandbank communities'*. This indicates one method available for compensation, removing existing infrastructure such that there is no net increase in the loss of subtidal sandbank in the SAC. This relates to the conclusion of the TCE Round 4 HRA as it relates to the Dogger Bank Wind Farm.

As identified in paragraph 8.3.4 of TCE Round 4 HRA[19] regarding loss of subtidal sandbank at Dogger Bank SAC: *'The following measures are considered to be potentially available to appropriately compensate for the identified impact, whilst it is acknowledged that measures considered in relevant guidance may be evidenced to be suitable when project specific information is available*:

- *Removal of Structures* [although it was noted that rock armour removal has never been achieved and could itself cause environmental damage]

[18] For example, HRA and Derogations Reports, where necessary, for individual schemes. This, in part, informs consenting authorities' assessments.
[19] https://www.datocms-assets.com/136653/1720790407-tce-r4-record-of-habitats-regulations-assessment.pdf

- *Removal of Debris* [although the EWG for the Round 4 HRA did not consider this would be a suitable measure; in consultation over this Derogations Report JNCC commented that NESO should note the joint SNCB advice on marine debris removal as compensation for impacts to benthic habitats from development which was published in 2023[20]]
- *Enhancement of existing habitat* [given the unique nature of the SAC (shallow sandy mound feature, produced by glacial processes) any new sandbank feature would have to be recognised as not equivalent in terms of its provenance, but that it could potentially deliver benefits to the National Site Network as the Annex 1 feature 'sandbanks slightly covered by seawater all the time'];
- *Reduction of other pressures from other activities (e.g. reserve creation and associated restrictions)*
- *New site designation (including extension of the existing site)'*

The Round 4 HRA then provides an analysis for the potential of each of the above options to deliver compensation. It was identified that there was the following extent of structures within the SAC:

- 0.77 km^2 of the seabed could be impacted by the physical presence of existing disused pipelines,
- 30.2 km of rock placed along the existing pipelines within the SAC; 0.3 km^2 of seabed could be impacted by existing rock along pipelines within the SAC; and
- removal of disused telecommunication cables would represent an area of 0.018 km^2

It was also noted that habitat loss may not be able to be compensated in a like-for-like manner, so this may require a wider approach seeking to secure benefits both within and outside the European Site. Time required for implementation was estimated to be a period of 1-3 years and that 3- 6 years may be required before the commencement of any Projects within the Dogger Bank SAC.

Other than reduction or removal of pressure from demersal fishing it was concluded that there is currently no realistic opportunity of working with other marine industries, or regulators, to change the scale of an existing impact at the Dogger Bank SAC. It was noted that the Marine Management Organisation ("MMO") have made a byelaw which came into force in June 2022 prohibiting all bottom towed fishing throughout the SAC (MMO, 2021). However, TCE considered there was potential to add to the spatial extent, longevity or effectiveness of the fishing prohibition which represents additional benefit.

Natural England have advised the Dogger Bank D developer that all of the above measures, other than new site designation/extension are not suitable for impacts on benthic habitats.

[20] https://hub.jncc.gov.uk/assets/a2b71fd2-8687-4dc7-8224-d6b8c3beed95

TCE concluded that the Dogger Bank SAC has clear areas of potential for extension where the Annex 1 Sandbank extends beyond the existing site boundary. Extension of the boundary north would therefore be in keeping with conservation of the wider structure of the bank and would provide like-for-like habitat representing the more diverse communities found within the SAC. A benefit of promoting an extension to the Dogger Bank SAC over identifying a new site for designation elsewhere, is that this would occur well within the timeframe that would be required for site selection of a new SAC. As such this measure will be taken forward as part of a suite of other measures that could potentially be used alongside other compensatory measures to achieve the desired scale of compensation at Dogger Bank SAC. Since these measures – particularly removal of structures and new site designation - were considered suitable as compensation in the TCE Round 4 HRA, it is reasonable to consider they would also be acceptable compensation options for cable protection for study corridors PA_1_to_Birkhill Wood, R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood.

Moreover, the challenge of identifying options for benthic compensation has in part driven work on strategic compensation[21]. On 1 February 2024 the Defra Secretary of State confirmed that the first three measures for delivering compensation at a strategic level had been approved. For compensation for benthic impacts, this included the designation and extension of Marine Protected Areas (MPAs) in English waters. This measure is now being progressed by Defra who plan to consult on potential compensatory MPAs before the end of 2026. This is expected to include an extension to Dogger Bank SAC although Defra have not yet specified where SAC extension will be delivered. Strategic compensatory measures will be delivered through the Marine Recovery Fund (MRF), which should become operational by the middle of 2026. Applicants will make a payment or payments to the fund. After this, the MRF operator will be responsible for delivering, maintaining, monitoring, decommissioning, and implementing any adaptive management.

Although responsible for strategic planning, NESO will not be consenting or delivering any development and therefore it is not the legal responsibility of NESO to secure compensation for these three study corridors. However, it is recommended that if the developer for these three study corridors has not already engaged with Defra, Natural England and the Joint Nature Conservation Committee regarding any reliance on the aforementioned strategic compensation for their planning applications, it should be done promptly. This will help to ensure that likely benthic impacts from the three corridors are scoped into work on the implementation of new and extended MPAs as soon as possible.

It is not possible for the plan to identify the location for such compensation measures or its extent because those aspects will be determined at the detailed design stage or strategically by Defra regarding an extension to Dogger Bank SAC. However, it has been estimated in this report that approximately 16 ha of subtidal sandbank may need to be compensated for. Moreover, it is possible to state based on existing experience from TCE Round 4 HRA that it is very likely to be possible for planning applications for these study

[21] https://www.gov.uk/guidance/offshore-wind-development-library-of-strategic-compensatory-measures

corridors to be able to identify and secure the necessary compensation. This conclusion matches that for the Dogger Bank South West and South East wind farm DCOs, and for TCEs assessment of Dogger Bank D[22].

[22] https://urldefense.com/v3/__https:/www.thecrownestate.co.uk/our-business/marine/capacity-increase-programme__;!!NPmo!i-wAlFNeuwHcHcsGYq5Dk4lkFHtqEcbzZiHwcpBWcQDNYNXdI9egTQNAlm2KH_6BiVVeHX5do15sRmyW-bxIk58jaihfh2TJ23qU$

5. Conclusion

Conclusion

At the plan level it is possible to conclude that study corridor SW_N4_to_Arnish_(Lewis) meets the test of 'no alternatives' and 'Imperative Reasons of Overriding Public Interest' as to why it should nonetheless proceed despite the harm it will cause to Lewis Peatlands SPA/Ramsar.

At the plan level it is possible to conclude that study corridors PA_1_to_Birkhill Wood[23], R4_1_to_Birkhill Wood and R4_2_to_Birkhill Wood all meet the test of 'no alternatives' and 'Imperative Reasons of Overriding Public Interest' as to why they should nonetheless proceed despite the harm they will cause to Dogger Bank SAC.

It is also concluded that there is a high level of confidence it would be technically feasible for the developer to deliver suitable compensation for the adverse effects on integrity. Therefore the plan can proceed with these four study corridors included.

[23] Despite an alternative study corridor, which reduces the risk of needing cable protection compared to the original study corridor, being pursued by the developer, derogations and compensatory provision would still be required.

6. Glossary

6. Glossary

Acronym	Description
AA	Appropriate Assessment
DESNZ	Department for Energy Security and Net Zero
HRA	Habitats Regulations Assessment
HDD	Horizontal Direct Drilling
HND	Holistic Network Design
IROPI	Imperative Reasons of Overriding Public Interest
NETS	National Electricity Transmission System
NESO	National Energy System Operator
Ofgem	Office of Gas and Electricity Markets
SAC	Special Area of Conservation
SPA	Special Protection Area

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