

The Great Grid Upgrade

Eastern Green Link 5 (EGL 5)

Preliminary Environmental Information Report

Volume 2

Part 3

Appendix 18.C Project Marine Conservation Zone (MCZ)
Assessment Screening

Document Reference: EGL5-NGET-CONS-XX-RP-YL-065

May 2026

nationalgrid

Contents

18.C. Project Marine Conservation Zone (MCZ) Assessment Screening	1
18.C.1. Introduction	1
18.C.2. Project Description	2
18.C.3. Consultation and Engagement	3
18.C.4. Assessment Methodology	5
18.C.5. Potential Impacts, Effects and Zones of Influence (Zoi)	8
18.C.6. MCZ Screening Assessment	16
18.C.7. Screening Conclusion	30

Appendix A Relevant Site Descriptions and Conservation Objectives 33

Table 18.C-1 Summary of offshore key maximum design parameters	2
Table 18.C-2 Scoping Opinion comments and how they have been considered	3
Table 18.C-3 JNCC advice	4
Table 18.C-4 Potential impact pathways between pressures and receptors	9
Table 18.C-5 Search areas for relevant MCZ / HPMA / NCMPA	14
Table 18.C-6 Foraging ranges used to screen relevant MPAs	15
Table 18.C-7 Relevant MCZ / HPMA / NCMPA sites selected for consideration in the screening	17
Table 18.C-8 Screening assessment for the English Offshore scheme	20
Table 18.C-9 Summary of the sites screened into the Stage 1 assessment	30
Appendix A Table 1 Relevant site descriptions and conservation objectives	34

Plate 18.C-1 Summary of the staged process used by the MMO in marine licence decision making (Ref 18.C. 1)	6
Plate 18.C-2 Source-pathway-receptor model example	7

Eastern Green Link (EGL) 5

Document control

Document Properties

Organisation	Collaborative Environmental Advisors
Author	Matthew Spencer
Approved by	Anna Farley
Title	Appendix 18.C - Project Marine Conservation Zone (MCZ) Assessment Screening
Published Document Ref	EGL5-NGET-CONS-XX-RP-YL-065
Data Classification	Public

18.C. Project Marine Conservation Zone (MCZ) Assessment Screening

18.C.1. Introduction

Purpose of this Report

- 18.C.1.1. This Marine Conservation Zone (MCZ) Screening assessment has been prepared in support of an application for development consent by National Grid Electricity Transmission (NGET) (a division of National grid plc) (the 'Applicant') to the Planning Inspectorate, for Eastern Green Link 5 (EGL 5) (the 'Project').
- 18.C.1.2. The Project is being jointly developed by the Applicant and Scottish and Southern Electricity Networks Transmission (SSEN Transmission). The proposal comprises a 2 gigawatt (GW) high voltage direct current (HVDC) link between Anderby Creek, Lincolnshire in England and Peterhead, Aberdeenshire.
- 18.C.1.3. Within England, the Project is being consented by a Development Consent Order (DCO). For seeking necessary consents, the Project has been split into 'Schemes' i.e. English Onshore Scheme, English Offshore Scheme, Scottish Onshore Scheme, and Scottish Offshore Scheme. These schemes are outlined in **Volume 1, Part 1, Chapter 1: Introduction** of the Preliminary Environmental Information Report (PEIR). This assessment is written with specific regard to the English Offshore Scheme which will be consented by way of a deemed Marine Licences (DML) included within the DCO. The Scottish Offshore Scheme and Scottish Onshore Scheme will be consented separately to the DCO for the Project.
- 18.C.1.4. The MCZ Assessment process is comprised of up to three stages. The aim of the Screening stage is to determine whether or not an activity is capable of affecting (other than insignificantly) the protected features or supporting physical processes of a MCZ, either directly or indirectly. This enables the competent authority, in this case the Secretary of State for the Department for Energy Security and Net Zero ("the SoS") to ensure compliance with the Marine and Coastal Access Act (MCAA) 2009.
- 18.C.1.5. Where there is no potential for a significant effect as a result of the English Offshore Scheme, the MCZ (or relevant feature of the MCZ) is 'screened out' from further consideration. Where the potential for a significant effect on the conservation objectives cannot be ruled out, it remains 'screened in' and taken forward to the next stage of the MCZ assessment process.
- 18.C.1.6. At present, three pilot Highly Protected Marine Areas (HPMAs) have been designated in UK waters as a type of MCZ under the MCAA. Consideration has therefore also been given to HPMAs as part of the Screening stage.
- 18.C.1.7. This report has been prepared during the pre-application stage, to accompany the Preliminary Environmental Information Report (PEIR). The report sets out the Applicant's approach to the MCZ assessment process, and records the findings, reasoning and conclusions in relation to the English Offshore Scheme.

18.C.1.8. The aim of the report is to seek agreement from the Marine Management Organisation (MMO) and the Statutory Nature Conservation Bodies (SNCBs) Natural England and the Joint Nature Conservation Committee (JNCC) on the Screening assessment presented and the content of the MCZ Assessment to be submitted with the DCO application. Opinion is sought as to whether the MMO, Natural England and JNCC agree with the findings and conclusions of this report.

18.C.2. Project Description

Overview

18.C.2.1. An overview of the English Offshore Scheme components of the Project has been provided below, with a full description of the Project provided in **Volume 1, Part 1, Chapter 4: Description of the Project** of the PEIR.

English Offshore Scheme

18.C.2.2. The English Offshore Scheme extends from Mean High Water Springs (MHWS) where the English Offshore Scheme makes landfall at Anderby Creek on the Lincolnshire coastline to the border between English and Scottish adjacent waters. The English Offshore Scheme would comprise the construction of:

- Up to 423 km of subsea HVDC cables from Anderby Creek, Lincolnshire to where it meets the boundary between English and Scottish waters. The subsea cable system would consist of two bundled HVDC cables and a fibre optic cable for control and monitoring purposes.
- Associated external cable protection such as rock, concrete mattresses, sand / rock / grout bags.

English Offshore Scheme Parameters

18.C.2.3. The key components of the English Offshore Scheme are described in **Table 18.C-1**. In accordance with the Rochdale Envelope approach, the parameters listed in **Table 18.C-1** represent the worst-case scenario.

Table 18.C-1 Summary of offshore key maximum design parameters

Parameter	Worst Case
Maximum cable length.	423 km
Maximum cable trench width.	1.5 m
Maximum seabed disturbance area from trenching tool.	25 m
Maximum width of boulder clearance.	25 m
Maximum width of Pre-Lay Grapnel Run (PLGR) clearance corridor.	30 m
Maximum sand wave clearance width.	60 m
Total length of cable route through the Holderness Offshore MCZ.	4.8 km

Parameter	Worst Case
Length of cable requiring PLGR within the Holderness Offshore MCZ.	4.8 km
Length of boulder clearance through the Holderness Offshore MCZ.	4.8 km
Maximum area of external cable protection within the Holderness Offshore MCZ.	0.0768 km ²

18.C.3. Consultation and Engagement

Scoping Opinion

18.C.3.1. A Scoping Report for the Project was submitted to the Planning Inspectorate on the 02 September 2025 and a Scoping Opinion was received from the Secretary of State on the 13 October 2025. **Table 18.C-2** sets out the comments raised in the Scoping Opinion and how these have been considered in this assessment where relevant. The information in the PEIR is preliminary and not all Scoping Opinion comments have been addressed at this stage, however all comments will be addressed within the ES.

Table 18.C-2 Scoping Opinion comments and how they have been considered

ID	Planning Inspectorate’s Comments	How this has been considered in this assessment
2.1.19	<p><i>“The ES should set out the burial hierarchy that would be implemented to avoid, prevent or reduce the need for external cable protection, and confirm how this would be secured. It should confirm the maximum design scenario (MDS) or worst-case parameters for external cable protection, including the location and maximum length, area and volume, and these parameters should be demonstrably secured. The parameters of any cable protection required in or adjacent to the Holderness Marine Conservation Zone (MCZ) should be confirmed. This should be provided for the construction (installation of cable) phase and for repair and replacement during operation. Assumptions made in determining the MDS should be clearly explained. The ES should assess the likely significant effects arising from placement of cable protection. It should explain the environmental effects arising from the different cable protection methods proposed, including any implications for decommissioning, and identify mitigation, for example by discounting methods, where these would result in significant adverse effects. The applicant’s attention is drawn to Joint Nature Conservation Committee’s (JNCC) comments (Appendix 2 of this Opinion) regarding</i></p>	<p>Acknowledged. Please refer to Volume 1, Part 1, Chapter 4: Description of the Project for the requested detail. Additionally, see Table 18.C-1 for the area of external cable protection required within the Holderness Offshore MCZ. Where information cannot be provided at this stage but will be available for the ES this is clearly described.</p>

ID	Planning Inspectorate's Comments	How this has been considered in this assessment
	<p><i>potential future prohibition of bottom towed gear in the MCZ, which could minimise the need for rock protection. The ES should confirm if such a prohibition has been implemented and how that has informed determination of the maximum cable protection parameters proposed.”</i></p>	

Further Engagement

18.C.3.2. The Applicant has engaged JNCC under a Discretionary Advice Service (DAS) agreement and was provided with discretionary advice in relation to route planning within the Holderness Offshore MCZ. The Applicant has also engaged Natural England under a Service Level Agreement (SLA). A summary of technical engagement undertaken up to the end of March 2026 is outlined in **Table 18.C-3**.

Table 18.C-3 JNCC advice

Date of advice	of Comment	How this has been considered in this assessment
28/08/2025	<p><i>Routes located within the Holderness Offshore MCZ could impact site features, including features that have a ‘Recover’ objective..... JNCC therefore strongly advise that the Applicant follow the mitigation hierarchy and avoid the routing of the cable through the Holderness Offshore MCZ.”</i></p> <p><i>“Where avoidance of the site is not possible, we advise that the mitigation hierarchy be applied as follows:</i></p> <ul style="list-style-type: none"> <i>• Avoid or minimise crossings within the site; and</i> <i>• Minimise the length of cable route through the site, avoiding locating the cable within features that have a conservation objective of ‘recover’.</i> <p><i>Where cable installation cannot do this, it is likely that a Stage 2 MCZ assessment will be required and consideration of Measures of Equivalent Environmental Benefit (MEEB).</i></p>	<p>The Applicant has undertaken extensive route selection and optioneering, which is clearly described within Volume 1, Part 1, Chapter 3: Reasonable Alternatives Considered. As set out therein, it was not possible to avoid the Holderness Offshore MCZ due to constraints including existing and planned infrastructure. However, in line with the mitigation hierarchy, the shortest route through the MCZ was identified and forms the basis of the current Project design.</p> <p>Following the MCZ assessment process, the need or otherwise for a Stage 2 MCZ assessment will be considered following the conclusion of the Stage 1 assessment, and further consultation with SNCBs.</p>

18.C.4. Assessment Methodology

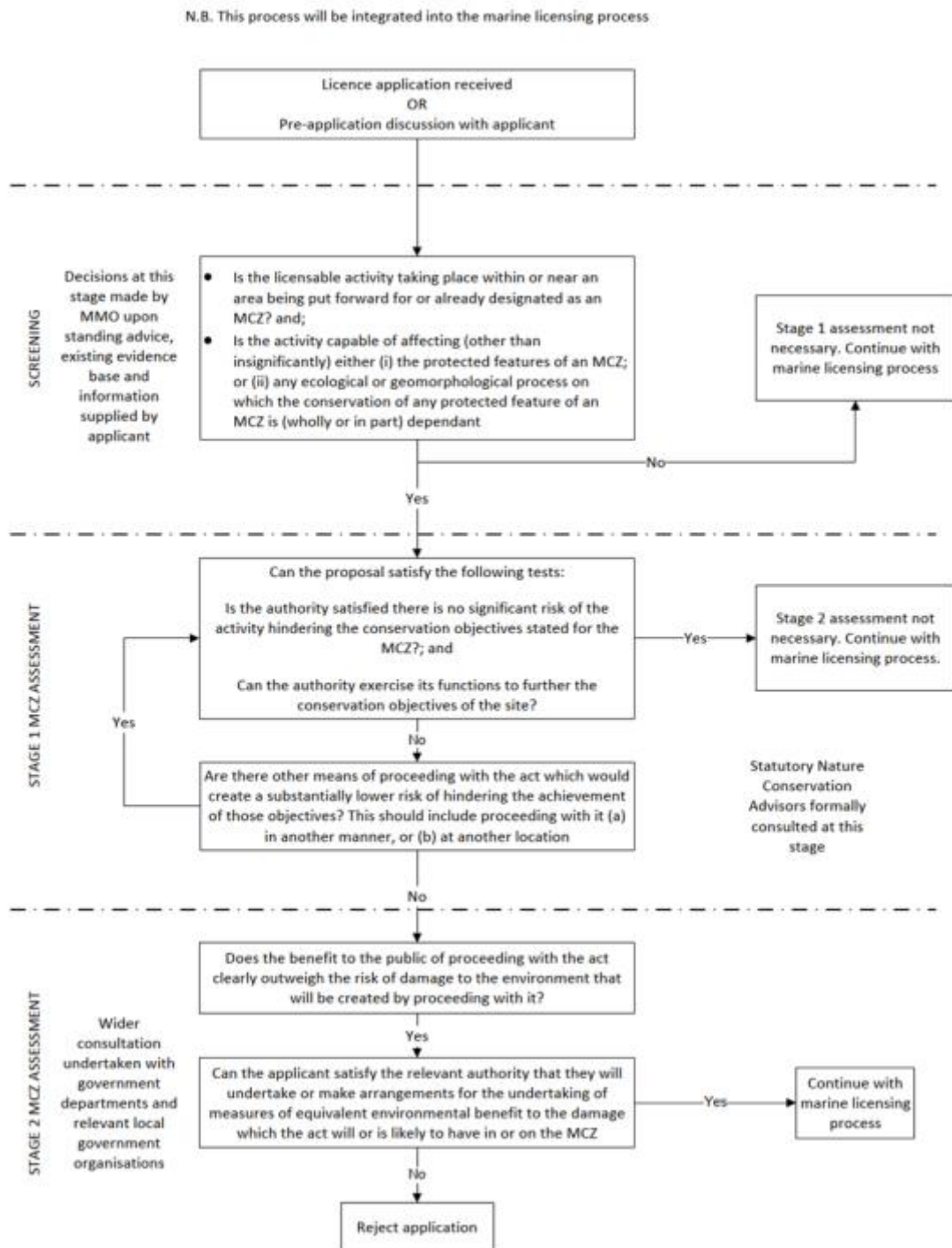
Overview

18.C.4.1. Section 126 of the MCAA requires that applicants seeking to undertake an activity must satisfy the competent authority that there is no significant risk of the proposed activity hindering the achievement of the conservation objectives stated for the MCZ. At present, three pilot Highly Protected Marine Areas (HPMAs) have been designated in UK waters as a type of MCZ under the MCAA. Additionally, as the English Offshore Scheme extends to the boundary between English and Scottish waters, any Nature Conservation Marine Protected Areas (NCMPAs) that could be impacted by the English Offshore Scheme must also be considered under the MCAA. There are three stages to the process for assessing the effects of a project on an MCZ / HPMA / NCMPA, with the outcome of each staging informing whether the assessment progresses to the next stage. Full details of these stages have been provided below and presented in **Plate 18.C-1**.

- **Screening:** The process of identifying whether Section 126 (2) should apply to the Project. Screening identifies whether the licensable activity is taking place within or near to an MCZ / HPMA / NCMPA; and identifies whether the activity is capable of affecting (other than insignificantly) either the protected features of the MCZ or the ecological or geomorphological processes on which the protected features are dependent.
- **Stage 1 Assessment:** This stage considers whether there is a significant risk of the licensable activity hindering the achievement of the conservation objectives stated for the MCZ / HPMA / NCMPA. If it is determined that there is significant risk of the licensable activity hindering the achievement of the conservation objectives stated, then the Stage 1 Assessment would progress to a Stage 2 Assessment. It would be necessary to consider whether there are other means of proceeding which could create a substantially lower risk, this could be done either as part of the Stage 1 Assessment (if significant risks are identified) or it may be more appropriate as part of the Stage 2 Assessment.
- **Stage 2 Assessment:** This stage looks at whether there are benefits to the public of proceeding with the Project that clearly outweigh the damage to the environment and what measures the applicant would take to provide equivalent environmental benefit to compensate for the damage which the Project would have on the MCZ / HPMA / NCMPA.

18.C.4.2. The MCZ Assessment is undertaken by the competent authority, which in this instance is the Secretary of State, based on information provided by the Applicant, usually in the form of a MCZ Assessment Report. **Plate 18.C-1** provides an overview of the staged process applied by the MMO in determining marine licence applications, illustrating the sequential steps followed from initial screening through to final decision making.

Plate 18.C-1 Summary of the staged process used by the MMO in marine licence decision making (Ref 18.C. 1)



18.C.4.3. The first stage is the Screening process which is required to determine whether Section 126 of the MCAA 2009 should apply. This document therefore provides the initial Screening exercise to determine whether:

- The plan, project or activity is within or near to an MCZ / HPMA / NCMPA.

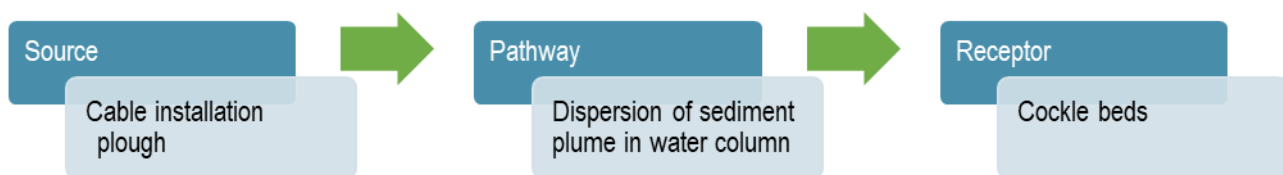
- The plan, project or activity is capable of significantly affecting (without mitigation) (i) the protected features of an MCZ, or (ii) any ecological or geomorphological processes on which the conservation of the features depends.

18.C.4.4. Guidance recommends a risk-based approach when determining the ‘nearness’ of an activity with respect to MCZs, advocating the application of appropriate buffer zones to the protected feature(s) and consideration of risks of activities which lie further removed from features. The likelihood of an activity causing an effect, the magnitude of that effect should it occur and the potential of the effect to hinder the achievement of the conservation objectives for the protected feature should also be considered. To identify relevant MCZs, HPMA and NCMPAs to include in this assessment the following approach has been adopted:

- Identify potential impact pathways and zones of influence (the spatial extent over which the impact may be experienced by receptors and therefore an effect may occur) between the English Offshore Scheme and protected features using the source-pathway-receptor model.
- Identify relevant MCZ, HPMA and NCMPA within the zones of influence.
- Assessment of whether, in the absence of mitigation measures, the identified potential impact pathway is capable of affecting (other than insignificantly) the protected feature or ecological or geomorphological process it is dependent on.

18.C.4.5. The potential for likely significant effects has been assessed using a source-pathway-receptor model. This approach identifies likely environmental effects resulting from the proposed licensable activities of the English Offshore Scheme. For instance, an activity (source) may entail a predicted change in environmental conditions affecting either directly or indirectly (the pathway) a specific component of the baseline environment (the receptor / protected feature). If the receptor / protected feature is sensitive to the change it could result in either a positive or adverse effect. **Plate 18.C-2** presents this model with a specific example to illustrate the concept.

Plate 18.C-2 Source-pathway-receptor model example



18.C.5. Potential Impacts, Effects and Zones of Influence (Zol)

Identifying Potential Impacts

- 18.C.5.1. Impacts have been established based on industry experience and consultation with relevant stakeholders. Where applicable the list of marine pressures established by the JNCC Marine Pressures-Activities Database v1.5 (Ref 18.C. 2), Osla and Paris (OSPAR) Intercessional Correspondence Group on Cumulative Effects (ICG-C) (Ref 18.C. 3) pressures and Natural England's advice on operations for relevant designated sites has been used to establish impacts to be screened. The pressures considered relevant for the Construction, Operation and Maintenance and Decommissioning of subsea cables are presented in **Table 18.C-4**. Note that impacts are given in dark grey, bold text, while any corresponding JNCC pressures are provided underneath marked with '*' in the first column of **Table 18.C-4**.

Defining a Zone of Influence (Zol)

- 18.C.5.2. The Zol for each of the impacts associated with the English Offshore Scheme (**Table 18.C-4**) has been used during the Screening assessment to determine whether there is likely to be a source-pathway-receptor between the English Offshore Scheme activities and MCZ / HPMA / NCMPA designated features. The Zol is defined as the spatial extent over which the pathway could affect the receptor, and has been established quantitatively where possible, or qualitatively based on evidence from analogous projects, post-construction monitoring data and literature reviews. Rationale for establishing the Zol is provided in **Table 18.C-4**. Conservative estimates have been used when calculating the final Zol for each impact to ensure that all potentially sensitive receptors are accounted for in the assessment process and that the 'worst-case scenario' is taken into consideration.

Table 18.C-4 Potential impact pathways between pressures and receptors

Potential Impact	Relevant Activities	Phase*			Pathway Description	Maximum Zol
		C	O&M	D		
<p>1. Temporary habitat loss / disturbance.</p> <p><i>Abrasion / disturbance of the substrate on the surface of the seabed*.</i></p> <p><i>Penetration and / or disturbance of the substratum below the surface of the seabed, including abrasion*.</i></p>	<ul style="list-style-type: none"> • Trenchless technique • Anchoring; • Pre-sweeping; • PLGR; • Boulder clearance; • Unexploded Ordnance (UXO) Identification; • Cable lay and burial; • Cable repair; • Cable removal; and • Temporary seabed deposits. 	✓	✓	✓	<p>The relevant activities result in short-term, Within the temporary alterations to the seabed surface draft Order (and sub-surface), within the direct footprint of Limits. the activity.</p>	
<p>2. Permanent habitat loss.</p> <p><i>Physical change (to another seabed or sediment type*.</i></p>	<p>Deposit of external cable protection.</p>	✓	✓	✓	<p>The relevant activities result in permanent Within the alterations to the seabed surface (and sub- draft Order surface), within the direct footprint of the Limits. activity.</p>	

Potential Impact	Relevant Activities	Phase*			Pathway Description	Maximum Zol
		C	O&M	D		
3. Changes in distribution of prey species.	<ul style="list-style-type: none"> Activities that lead to Impact 1. Activities that lead to Impact 2. 	✓	✓	✓	Activities that alter seabed habitats can reduce prey species abundance, particularly during spawning periods for demersal species (e.g., sandeel <i>Ammodytes</i> , herring <i>Clupea harengus</i>), which may affect fish, bird, and marine mammal receptors.	Within the draft Order Limits.
4. Temporary increase and deposition of suspended sediments. <i>Changes in suspended solids (water clarity)*.</i> <i>Smothering and siltation rate changes*.</i>	<ul style="list-style-type: none"> Trenchless technique; Anchoring; Pre-sweeping; PLGR; Boulder clearance; Cable lay and burial; Cable repair; Cable removal; Deposit of external cable protection; and Temporary seabed deposits. 	✓	✓	✓	During relevant activities, sediment suspension would occur followed by the subsequent deposition on the seabed within 8.8 km from the Zol.	Within the draft Order Limits.

Potential Impact	Relevant Activities	Phase*			Pathway Description	Maximum Zol
		C	O&M	D		
5. Water flow (tidal current) including sediment transport considerations.	Deposit of external cable protection.	✓	✓	✓	The use of external cable protection which is elevated above the seabed can potentially result in localised changes in water flow. Changes in water flow may impact demersal fish and shellfish communities within the Zol. A change in water flow may also impact geomorphological features.	Within the draft Order Limits.
6. Temperature changes – local.	Operational cables.	✗	✓	✗	During the operation of an HVDC cable heat can be generated by the resistance in the cable / conductor, causing localised heating of the surrounding environment (i.e., sediment for buried cables, or water in the interstitial spaces of external cable protection).	Within the draft Order Limits.
7. Electromagnetic changes.	Operational cables.	✗	✓	✗	Marine HVDC cables emit magnetic fields, with movement of the water or organisms through the field also generating induced electric fields. Many marine species are able to detect both magnetic or electric fields and may use them for migration or prey location, with such activities potentially affected by anthropogenic fields.	Within the draft Order Limits.
8. Introduction or spread of marine invasive non-native species (MINNS).	<ul style="list-style-type: none"> • Deposit of external cable protection. • Presence of the English Offshore Scheme vessels. 	✓	✓	✗	Ballast water discharge, hull fouling and stepping stone effects from offshore structures may facilitate the spread of non-native species, e.g., Chinese mitten crabs (<i>Eriocheir sinensis</i>), slipper limpets (<i>Crepidula fornicata</i>), Pacific oyster (<i>Crassostrea gigas</i>).	Within the draft Order Limits.

Potential Impact	Relevant Activities	Phase*			Pathway Description	Maximum Zol
		C	O&M	D		
9. Barriers to species movement.	<ul style="list-style-type: none"> • Trenchless technique; • Anchoring; • Pre-sweeping; • PLGR; • Boulder clearance; • UXO Identification; • Cable lay and burial; • Cable repair; • Cable removal; and • Temporary seabed deposits. 	✓	✓	✓	Activities or the presence of infrastructure may cause physical obstruction of species movements and including local movements (within and between roosting, breeding, feeding areas) and regional / global migrations (e.g., birds and marine mammals).	Within the draft Order Limits.
10. Underwater noise changes.	<ul style="list-style-type: none"> • Presence of the English Offshore Scheme vessels. • Geophysical surveys. 	✓	✓	✓	Vessels and equipment for the English Offshore Scheme would generate continuous underwater noise which may result in the temporary behavioural disturbance and displacement of marine mammals, fish, shellfish and diving bird species such as sea ducks.	5 km (Ref 18.C. 4).
11. Visual / physical disturbance or displacement.	Presence of the English Offshore Scheme vessels and equipment.	✓	✓	✓	Vessel movement can create visual stimuli which can evoke a disturbance response in mobile species such as seabirds.	4 km (Ref 18.C. 5)

Above water noise*.

Potential Impact	Relevant Activities	Phase*			Pathway Description	Maximum Zol
		C	O&M	D		
12. Collision with project vessels.	Presence of the English Offshore Scheme vessels and equipment.	✓	✓	✓	The presence of vessels can lead to collisions with marine mammals.	Within the draft Order Limits.
13. Accidental Spills. Hydrocarbon & PAH contamination*.	Presence of the English Offshore Scheme vessels.	✓	✓	✓	During offshore works, accidental spillage may occur directly into the water column.	Within the draft Order Limits.

* (C = Construction, O&M = Operation & Maintenance, D = Decommissioning)

Table 18.C-5 Search areas for relevant MCZ / HPMA / NCMPA

Interest Feature	Search Area	Justification
Habitats; Benthic Species; and Geomorphological Interests.	8.8 km from draft Order Limits.	All direct impacts would be spatially limited and confined to the direct footprint of activities (e.g., seabed preparation, cable burial, external cable protection, remedial works and decommissioning). There is the potential for impacts from the suspension and deposition of finer sediments to occur outside of the immediate area of the activities. Volume 1, Part 3, Chapter 17: Coastal and Marine Physical Processes used a Study Area of 19.8 km which was based on the maximum spring tidal excursion in the English Offshore Scheme which was used to identify relevant designated sites. However, Volume 1, Part 3, Chapter 17: Coastal and Marine Physical Processes outlined the greatest plume extent above 10 mg / l was associated with trenching in the area where there was the highest percentage of fines and fast peak flows, with peak SSC of more than 10 mg / l occurring up to 8.8 km from the point of release. Any exceedances of more than 10 mg / l will be of short duration beyond the draft Order Limits due to the relatively fast tidal flows. Therefore, a Zol of 8.8 km has been applied.
Fish & Shellfish	40 km from draft Order Limits.	Vessels using dynamic positioning (DP) systems would be utilised during the construction, operation, and decommissioning phases of the English Offshore Scheme. Behavioural disturbance is observed in fish as a result of DP vessels at a distance of up to 1,359 m (Ref 18.C. 6). Further to this, there is potential for underwater noise as a result of vessel activity and geophysical surveys to displace fish within the Zol and impede migration (for migratory species). As such, a precautionary approach to the identification of relevant sites has been adopted which considers all MCZs / NCMPAs within 40 km of the draft Order Limits. While this is considered overly cautious in terms of capturing the Zol from impacts such as underwater noise (e.g., from geophysical surveys), it accounts for the potential movement of fish from nearby sites through the draft Order Limits.

Interest Feature	Search Area	Justification
Cetaceans	Species specific management unit.	In the UK the only cetacean species afforded protection through the designation of an MCZ / NCMPA are minke whale (<i>Balaenoptera acutorostrata</i>) and Risso's dolphin (<i>Grampus griseus</i>). Management Units (MU) have been outlined for marine mammal species by the Inter-Agency Marine Mammal Working Group (Ref 18.C. 7) which comprises representative from the UK SNCBs i.e., Natural England, NatureScot, Natural Resources Wales and the Department of Agriculture, Environment and Rural Affairs. MU are used to inform SNCB advice and are therefore the appropriate spatial scale for assessment of environmental impacts on species from marine development projects. The English Offshore Scheme lies within the Celtic and Greater North Seas (CGNS) MU for minke whale and Risso's dolphin.
Birds	Based on maximum foraging ranges for relevant species identified in Table 18.C-6.	All direct impacts would be spatially limited and confined to the direct footprint of activities, however, there is the possibility that species from distant sites may be foraging within or passing through the draft Order Limits. Bird species that are designated features of MCZs / NCMPAs are black guillemot (<i>Cepphus grille</i>), common eider (<i>Somateria mollissima</i>) and razorbill (<i>Alca torda</i>). MCZs / NCMPAs have been considered relevant if they have one or more of these species listed as a designated feature which could potentially be present within the draft Order Limits based on their maximum foraging ranges (as listed Table 18.C-6).

Table 18.C-6 Foraging ranges used to screen relevant MPAs

Species Name	Disturbance Susceptibility*	Habitat Specialisation*	Foraging Ranges (km) ^	Confidence ^
Razorbill	3	3	88.7	Good
Black guillemot	3	4	4.8	Moderate
Common eider	3	4	21.5	Poor

* Joint SNCB Joint Interim Advice., (Ref 18.C. 6)

^ Woodward *et al.*, (Ref 18.C. 8)

18.C.6. MCZ Screening Assessment

Relevant MCZ, HPMA and NCMPA

- 18.C.6.1. A Geographical Information System (GIS) and the JNCC marine protected area mapper, were used to identify relevant MCZs, HPMA and NCMPAs. **Table 18.C-7** lists the designated sites selected for consideration for Screening, with their relevant site descriptions and conservation objectives outlined in **Appendix A**. Where a designated feature is outside the relevant Zol as described in **Table 18.C-4** it has not been considered further in the Screening assessment as there is not considered to be a source-receptor pathway.
- 18.C.6.2. It should be noted that for the English Offshore Scheme there are no relevant sites that list mobile fish or shellfish or for bird species within the relevant Zols.
- 18.C.6.3. It should also be noted that northeast of Farnes Deep MCZ overlaps entirely with the northeast of Farnes Deep HPMA. To ensure a full, comprehensive assessment, and to avoid any confusion between the two designations, the northeast of Farnes Deep MCZ and the northeast of Farnes Deep HPMA are considered separately.
- 18.C.6.4. The following MCZs / HPMA / NCMPA's are considered to have the potential to be affected by the English Offshore Scheme:
- Holderness Offshore MCZ;
 - Northeast of Farnes Deep MCZ;
 - Northeast of Farnes Deep HPMA; and
 - Swallow Sands MCZ.

Table 18.C-7 Relevant MCZ / HPMA / NCMPSA sites selected for consideration in the screening

Site Name and ID	Country	Designated Features	Distance to the draft Relevant Order Limits (km)	Designated Features
Holderness Offshore MCZ UKMCZ0078.	England	<p>Geology: North Sea glacial tunnel valleys.</p> <p>Habitats: Subtidal coarse sediment. Subtidal mixed sediment. Subtidal sand.</p> <p>Species: Ocean quahog.</p>	Overlaps for 4.93 km ²	All designated features.
Swallow Sands MCZ UKMCZ0026.	England	<p>Geology: North Sea glacial tunnel valleys.</p> <p>Habitats: Subtidal coarse sediment. Subtidal sand.</p>	9.22	All designated features.
Northeast of Farnes Deep HPMA UKEHPMA003.	England	<p>The marine ecosystem of the area which includes: All marine flora and fauna, all marine habitats and all geological or geomorphological interests, including all abiotic elements and all supporting ecosystem functions and processes, in the seabed, water column and the surface of the sea.</p>	12.80	The marine ecosystem of the area.

Site Name and ID	Country	Designated Features	Distance to the draft Relevant Order Limits (km)	Designated Features
Northeast of Farnes Deep MCZ UKMCZ0024.	England	Habitats: Subtidal coarse sediment. Subtidal mixed sediments. Subtidal mud. Subtidal sand. Species: Ocean quahog.	12.80	All designated features.

Screening Assessment

- 18.C.6.5. **Table 18.C-7** sets out the Screening assessment undertaken to determine the potential for the English Offshore Scheme to interact with any MCZs.

Table 18.C-8 Screening assessment for the English Offshore scheme

Relevant Designated Feature	Potential Impact	Connectivity between the English Offshore Scheme and Designated Feature(s)	Screening Decision
Holderness Offshore MCZ. The draft Order Limits overlaps the MCZ for 4.93 km.			
Geology: <ul style="list-style-type: none"> ● North Sea glacial tunnel valleys. 	Temporary habitat loss / seabed disturbance.	Yes - There is potential for temporary habitat loss and seabed disturbance within the MCZ from seabed preparation and cable laying activities. Designated features are sensitive to this impact and within the Zol; therefore, this impact is screened in for all phases, including Operation and Maintenance and Decommissioning.	Screened in
Habitats: <ul style="list-style-type: none"> ● Subtidal coarse sediment; ● Subtidal mixed sediments; and ● Subtidal sand. 	Permanent habitat loss.	Yes - There is the potential for external cable protection to result in permanent habitat loss at all phases of the development including decommissioning if the external cable protection is left in-situ.	Screened in
Species: <ul style="list-style-type: none"> ● Ocean quahog <i>Artica islandica</i>; 	Water flow (tidal current) changes, including sediment transport considerations.	Yes - There is the potential for external cable protection to result in localised water flow changes at all phases of the development including decommissioning if the external cable protection is left in-situ.	Screened in
	Introduction or spread of MINNS.	No – There is the potential for vessels, equipment and installation of external cable protection to introduce or spread MINNS. The Project’s vessels’ and Contractor(s) will comply with the International Convention for the Control and Management of Ships’ Ballast Water and Sediments (BWM Convention). All seabed deposits will be inert with no biologically active material. Project vessels will complete a biosecurity risk assessment prior to arriving on site which will include factors such as origins of the vessels and ensuring that relevant equipment is cleaned before use.	Screened out

Relevant Designated Feature	Potential Impact	Connectivity between the English Offshore Scheme and Designated Feature(s)	Screening Decision
	Accidental spills.	No - There is the potential for Project vessels to result in accidental spills, however all Project vessels must comply with the International Regulations for Preventing Collisions at Sea (1972) regulations relating to International Convention for the Prevention of Pollution from Ships (the MARPOL Convention 73/78) with the aim of preventing and minimising pollution from ships and the International Convention for the Safety of Life at Sea. An offshore Outline Construction Environmental Management Plan including an Emergency Spill Response Plan and Waste Management Plan, Marine Pollution Contingency Plan (MPCP), Shipboard Oil Pollution Emergency Plan (SOPEP) and a dropped objects procedure would be produced prior to installation.	Screened out
Habitats: <ul style="list-style-type: none"> • Subtidal coarse sediment; • Subtidal mixed sediments; and • Subtidal sand. 	Temporary increase and deposition of suspended sediments.	Yes - The MCZ overlaps with the draft Order Limits, and these designated features are sensitive to smothering and changes in SSC. Therefore, this impact is screened in for all phases, including Operation and Maintenance and Decommissioning.	Screened in
Species: <ul style="list-style-type: none"> • Ocean quahog. 	Temporary increase and deposition of suspended sediments.	No - Ocean quahog is not sensitive to sediment deposition / changes in SSC, therefore screened out.	Screened out
	Temperature changes.	No – Ocean quahog are considered to have a medium sensitivity to.	Screened out
	Electromagnetic changes.	No - The effects of electromagnetic fields (EMF) on invertebrates have not yet been well studied. However, studies on other bivalve species, such as the blue mussel and Mediterranean mussel, suggest that EMF does not induce physiological changes at levels	Screened out

Relevant Designated Feature	Potential Impact	Connectivity between the English Offshore Scheme and Designated Feature(s)	Screening Decision
<p>below 300 μT (Ref 18.C. 11, Ref 18.C. 12, Ref 18.C. 13, Ref 18.C. 14). Therefore, it is reasonable to assume that ocean quahog (also a bivalve mollusc) may respond similarly to EMF.</p> <p>The burial and bundling of cables help to reduce the strength of induced electrical fields when compared to surface laid cables. Therefore the effects of EMF have been screened out.</p>			
<p>Swallow Sands MCZ Distance from the draft Order Limits to the MCZ: 9.22 km</p>			
<p>Habitats:</p> <ul style="list-style-type: none"> Subtidal coarse sediment; and Subtidal sand. 	<p>Temporary habitat loss / seabed disturbance.</p>	<p>No - The English Offshore Scheme does not cross the boundary for this MCZ and is beyond the Zol for the potential impact (draft Order Limits).</p>	<p>Screened out</p>
<p>Geology:</p> <ul style="list-style-type: none"> North Sea glacial tunnel valleys (Swallow Hole). 	<p>Permanent habitat loss.</p>	<p>No - The English Offshore Scheme does not cross the boundary for this MCZ and is beyond the Zol for the potential impact (draft Order Limits).</p>	<p>Screened out</p>
	<p>Water flow (tidal current) changes, including sediment transport considerations.</p>	<p>No - The English Offshore Scheme does not cross the boundary for this MCZ and is beyond the Zol for the potential impact.</p>	<p>Screened out</p>
	<p>Temporary increase and deposition of suspended sediments.</p>	<p>No - The English Offshore Scheme is beyond the Zol (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the MCZ.</p>	<p>Screened out</p>
	<p>Introduction or spread of MINNS.</p>	<p>No – There is the potential for vessels to introduce or spread MINNS. The Project’s vessels’ and Contractor(s) will comply with</p>	<p>Screened out</p>

Relevant Designated Feature	Potential Impact	Connectivity between the English Offshore Scheme and Designated Feature(s)	Screening Decision
		the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention). Project vessels will complete a biosecurity risk assessment prior to arriving on site which will include factors such as origins of the vessels and ensuring that relevant equipment is cleaned before use.	
	Accidental spills.	No - The English Offshore Scheme is beyond the Zol (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the MCZ.	
Northeast of Farnes Deep MCZ			
Distance from the draft Order Limits to the MCZ: 12.80 km			
Habitats:	Temporary habitat loss / seabed disturbance.	No - The English Offshore Scheme does not cross the boundary for this MCZ and is beyond the Zol for the potential impact (draft Order Limits).	Screened out
<ul style="list-style-type: none"> Subtidal coarse sediment; Subtidal mixed sediments; Subtidal mud; and Subtidal sand. 	Permanent habitat loss.	No - The English Offshore Scheme does not cross the boundary for this MCZ and is beyond the Zol for the potential impact (draft Order Limits).	Screened out
Species	Water flow (tidal current) changes, including sediment transport considerations.	No - The English Offshore Scheme does not cross the boundary for this MCZ and is beyond the Zol for the potential impact.	Screened out
<ul style="list-style-type: none"> Ocean quahog. 	Introduction or spread of MINNS.	No – There is the potential for vessels to introduce or spread MINNS. The Project's vessels' and Contractor(s) will comply with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention). Project	Screened out

Relevant Designated Feature	Potential Impact	Connectivity between the English Offshore Scheme and Designated Feature(s)	Screening Decision
		vessels will complete a biosecurity risk assessment prior to arriving on site which will include factors such as origins of the vessels and ensuring that relevant equipment is cleaned before use.	
	Accidental spills.	No - The English Offshore Scheme is beyond the Zol (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the MCZ.	Screened out
Habitats: <ul style="list-style-type: none"> ● Subtidal coarse sediment; ● Subtidal mixed sediments; ● Subtidal mud; and ● Subtidal sand. 	Temporary increase and deposition of suspended sediments.	No - The English Offshore Scheme is beyond the Zol (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the MCZ.	Screened out
Species: <ul style="list-style-type: none"> ● Ocean quahog. 	Temporary increase and deposition of suspended sediments.	No - The English Offshore Scheme is beyond the Zol (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the MCZ.	Screened out
	Temperature changes.	No - The English Offshore Scheme Project does not cross the boundary for this MCZ and is beyond the Zol for the potential impact (draft Order Limits).	Screened out
	Electromagnetic changes.	No - The English Offshore Scheme Project does not cross the boundary for this MCZ and is beyond the Zol for the potential impact (draft Order Limits).	Screened out

Relevant Designated Feature	Potential Impact	Connectivity between the English Offshore Scheme and Designated Feature(s)	Screening Decision
Northeast of Farnes Deep HPMA			
Distance from the draft Order Limits to the HPMA: 12.80 km			
EUNIS level three broad-scale habitats: <ul style="list-style-type: none"> • Sublittoral coarse sediment; • Sublittoral sand; • Sublittoral mud; and • Sublittoral mixed sediments. 	Temporary increase and deposition of suspended sediments.	No - The English Offshore Scheme is beyond the Zol (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the HPMA.	Screened out
Important habitats: <ul style="list-style-type: none"> • Subtidal sands and gravels; and • Seapens and burrowing megafauna. 	Water flow (tidal current) changes, including sediment transport considerations.	No - The English Offshore Scheme does not cross the boundary for this HPMA and is beyond the Zol for the potential impact.	Screened out
	Introduction or spread of MINNS.	No – There is the potential for vessels to introduce or spread MINNS. The Project’s vessels’ and Contractor(s) will comply with the International Convention for the Control and Management of Ships’ Ballast Water and Sediments (BWM Convention). Project vessels will complete a biosecurity risk assessment prior to arriving on site which will include factors such as origins of the vessels and ensuring that relevant equipment is cleaned before use.	Screened out
	Accidental spills.	No - The English Offshore Scheme is beyond the Zol (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the HPMA.	Screened out.
Important demersal / benthic species: <ul style="list-style-type: none"> • Ocean quahog. 	Temporary increase and deposition of suspended sediments.	No - The English Offshore Scheme is beyond the Zol, therefore, there is no source-receptor-pathway at any stage of the development on the features of the HPMA.	Screened out

Relevant Designated Feature	Potential Impact	Connectivity between the English Offshore Scheme and Designated Feature(s)	Screening Decision
	Water flow (tidal current) changes, including sediment transport considerations.	No - The English Offshore Scheme does not cross the boundary for this HPMA and is beyond the Zol for the potential impact.	Screened out
	Temperature changes.	No - The English Offshore Scheme is beyond the Zol, therefore, there is no source-receptor-pathway at any stage of the development on the features of the HPMA.	Screened out
	Electromagnetic changes.	No - The English Offshore Scheme is beyond the Zol, therefore, there is no source-receptor-pathway at any stage of the development on the features of the HPMA.	Screened out
	Accidental spills.	No - The English Offshore Scheme is beyond the Zol (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the HPMA.	Screened out
Important bird species: <ul style="list-style-type: none"> Black-legged kittiwake <i>Rissa tridactyla</i>; Common guillemot <i>Uria Aalge</i>; Herring gull <i>Larus argentatus</i>; Northern fulmar <i>Fulmarus Glacialis</i>; 	Changes in distribution of prey species.	No - Volume 1, Part 3, Chapter 19: Fish and Shellfish concluded that the English Offshore Scheme would not have a significant adverse effect on fish and shellfish ecology. No impact on stock abundance or recruitment is predicted. Therefore, there will be no change to prey distribution within the HPMA.	Screened out
	Temporary increase and deposition of suspended sediments.	No - The HPMA is beyond the Zol (8.8 km) for the English Offshore Scheme. Therefore, there will be no change to SSC and sediment deposition within the HPMA.	Screened out

Relevant Designated Feature	Potential Impact	Connectivity between the English Offshore Scheme and Designated Feature(s)	Screening Decision
<ul style="list-style-type: none"> Northern gannet <i>Morus bassanus</i>; Razorbill; 	Barriers to species movement.	No - The English Offshore Scheme does not overlap with the HPMA and is 12.80 km at the closest point. Therefore, any changes in EMF will not affect the features within the HPMA.	Screened out
<ul style="list-style-type: none"> Atlantic puffin <i>Fratercula artica</i>; European storm petrel <i>Hydrobates pelagicus</i>; Great skua <i>Stercorarius skua</i>; and Lesser black-backed gull <i>Larus fuscus</i>. 	Underwater noise changes.	No - The noise levels from vessels and general construction works are limited and will attenuate over relatively short distances. The HPMA is 12.80 km from the English Offshore Scheme and therefore there will be no change in underwater noise within the HPMA from works associated with the English Offshore Scheme.	Screened out
	Visual / physical disturbance or displacement.	No - The English Offshore Scheme does not overlap with the HPMA and is 12.80 km at the closest point, therefore vessels associated with works on the English Offshore Scheme will be sufficiently distant from the HPMA to ensure there is no visual / physical disturbance or displacement to the identified species within the HPMA.	Screened out
	Accidental spills.	No - The English Offshore Scheme is beyond the ZoI (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the HPMA.	Screened out
Important marine mammal species <ul style="list-style-type: none"> Harbour porpoise (<i>Phocoena phocoena</i>); Minke whale; White-beaked dolphin (<i>Lagenorhynchus albirostris</i>); 	Changes in distribution of prey species.	No - Volume 1, Part 3, Chapter 19: Fish and Shellfish concluded that the English Offshore Scheme would not have a significant adverse effect on fish and shellfish ecology. No impact on stock abundance or recruitment is predicted. Therefore, there will be no change to prey distribution within the HPMA.	Screened out
	Electromagnetic changes.	No - The English Offshore Scheme does not overlap with the HPMA and is 12.80 km at the closest point. Therefore, any changes in EMF will not affect the features within the HPMA.	Screened out

Relevant Designated Feature	Potential Impact	Connectivity between the English Offshore Scheme and Designated Feature(s)	Screening Decision
<ul style="list-style-type: none"> Grey seal (<i>Halichoerus grypus</i>); and Harbour seal (<i>Phoca vitulina</i>). 	Barriers to species movement.	No - The English Offshore Scheme does not overlap with the HPMA and is 12.80 km at the closest point. Therefore, any changes in EMF will not affect the features within the HPMA.	Screened out
	Underwater noise changes.	No - The noise levels from vessels and general construction works are limited, with only a very small spatial impact and are unlikely to be audible to marine mammals within the HPMA.	Screened out
	Visual / physical disturbance or displacement.	No - Whilst some marine mammal species show a tendency to avoid vessel such as those which would be used for the English Offshore Scheme, vessels associated with the English Offshore Scheme will be 12.80 km from the HPMA and so are not considered capable of significantly affecting the features within the site.	Screened out
	Collision with project vessels.	No - Vessels associated with the Project will be moving slowly during works and will not pass through the HPMA, and therefore the risk of a collision with marine mammals is considered to be negligible. As such, there would be no significant effect on the feature within the HPMA.	Screened out
	Accidental spills.	No - The English Offshore Scheme is beyond the Zol (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the HPMA.	Screened out
Important fish species <ul style="list-style-type: none"> Angler fish (<i>Lophius piscatorius</i>); 	Temporary increase and deposition of suspended sediments.	No - The HPMA is beyond the Zol (8.8 km) for the English Offshore Scheme. Therefore, there will be no change to SSC and sediment deposition within the HPMA.	Screened out

Relevant Designated Feature	Potential Impact	Connectivity between the English Offshore Scheme and Designated Feature(s)	Screening Decision
<ul style="list-style-type: none"> Haddock (<i>Melanogrammus aeglefinus</i>); 	Temperature changes.	No - The English Offshore Scheme does not overlap with the HPMA and is 12.80 km at the closest point. Therefore, any changes in temperature will not affect the features within the HPMA.	
<ul style="list-style-type: none"> European pilchard (<i>Sardina Pilchardus</i>); 	Electromagnetic changes.	No - The English Offshore Scheme does not overlap with the HPMA and is 12.80 km at the closest point. Therefore, any changes in EMF will not affect the features within the HPMA.	Screened out
<ul style="list-style-type: none"> Whiting (<i>Merlangius merlangus</i>); and 			
<ul style="list-style-type: none"> European Smelt (<i>Osmerus eperlanus</i>). 	Underwater noise changes.	No - The noise levels from vessels and general construction works are limited, with only a very small spatial impact and are unlikely to audible to fish species within the HPMA.	Screened out
	Visual / physical disturbance or displacement.	No - Any vessels associated with the English Offshore Scheme will be 12.80 km at the closest point from the HPMA and so are not considered capable of significantly affecting the features within the site.	Screened out
	Accidental spills.	No - The English Offshore Scheme is beyond the ZoI (8.8 km), therefore, there is no source-receptor-pathway at any stage of the development on the features of the HPMA.	Screened out

18.C.7. Screening Conclusion

- 18.C.7.1. The Screening assessment reached the following conclusions:
- No HPMAs were screened in for Stage 1 Assessment; and
 - One MCZ was screened in for Stage 1 Assessment - Holderness Offshore MCZ.
- 18.C.7.2. **Table 18.C-9** below provides a summary of the sites screened into the Stage 1 Assessment. A Stage 1 Assessment would be undertaken, in consultation with Natural England and JNCC, to be submitted with the DCO application.

Table 18.C-9 Summary of the sites screened into the Stage 1 assessment

Site name	Relevant Designated Feature	Potential Impact
Holderness Offshore MCZ.	Geology: North Sea glacial tunnel valleys.	Temporary habitat loss / seabed disturbance.
	Habitats: Subtidal coarse sediment. Subtidal mixed sediments. Subtidal sand.	Permanent habitat loss.
	Benthic species: Ocean quahog.	Water flow (tidal current) changes, including sediment transport considerations.
	Habitats: Subtidal coarse sediment. Subtidal mixed sediments. Subtidal sand.	Temporary increase and deposition of suspended sediments.

Bibliography

Ref 18.C. 1 MMO (2013). Marine Conservation Zones and Marine Licensing.

Ref 18.C. 2 JNCC (2022). Marine Pressures-Activities Database (PAD) v1.5. [online] Available at: Marine Pressures-Activities Database (PAD) v1.5 | JNCC Resource Hub [Accessed February 2026].

Ref 18.C. 3 Oslo and Paris (OSPAR) Commission (2011) Intersessional Correspondence Group on Cumulative Effects - Amended 25th March 2011. [online] Available at: <https://www.ospar.org/meetings/archive/interseessional-correspondence-group-on-cumulative-effects> [Accessed February 2026].

Ref 18.C. 4 JNCC (2020). Guidance for assessing the significance of noise disturbance against Conservation Objectives of harbour porpoise SACs Wales & Northern Ireland 8091. JNCC Report No. 65 4 (England, JNCC, Peterborough, ISSN 0963).

Ref 18.C. 5 Popper, A. N., Hawkins, A. D., Fay, R. R., Mann, D. A., Bartol, S., Carlson, T. J., ... & Tavolga, W. N. (2014). Sound exposure guidelines (pp. 33-51). Springer International Publishing. [Accessed February 2026].

Ref 18.C. 6 Joint SNCB (2022). Joint SNCB Interim Displacement Advice Note. Available at: <https://data.jncc.gov.uk/data/9aecb87c-80c5-4cfb-9102-39f0228dcc9a/joint-sncb-interim-displacement-advice-note-2022.pdf> [Accessed February 2026].

Ref 18.C. 7 IAMMWG. 2023. Review of Management Unit boundaries for cetaceans in UK waters (2023). JNCC Report 734, JNCC, Peterborough, ISSN 0963-8091. <https://hub.jncc.gov.uk/assets/b48b8332-349f-4358-b080-b4506384f4f7> [Accessed February 2026].

Ref 18.C. 8 Woodward, I., Thaxter, C., Owen, E. and Cook, A. (2019). Desk-based revision of seabird foraging ranges used for HRA screening. Report of work carried out by the British Trust for Ornithology on behalf of NIRAS and The Crown Estate, Issue BTO Research Report No.724 [Accessed February 2026].

Ref 18.C. 9 JNCC (2023b) North East of Farnes Deep MPA and HPMa. Available at: <https://jncc.gov.uk/our-work/north-east-of-farnes-deep-mpa-and-hpma/> [Accessed February 2026].

Natural England and JNCC (2022b). Annex H. Ecological narratives: Supplementary documentation on the ecological merit of the candidate Highly Protected Marine Areas in English waters. Available at https://consult.defra.gov.uk/hpma/consultation-on-highly-protected-marine-areas/supporting_documents/HPMA%20consultation%20Annex%20H%20Ecological%20narratives%20.pdf [Accessed February 2026].

Ref 18.C. 10 Gill, A. B., & Bartlett, M. D. (2011). Literature review on the potential effects of electromagnetic fields and subsea noise from marine renewable energy developments on Atlantic salmon, sea trout and European eel. Scottish Natural Heritage Commissioned Report. [Accessed February 2026].

Ref 18.C. 11 Bochert, R. and Zettler, M. L. (2004b) Long-term exposure of several marine benthic animals to static magnetic fields. *Bioelectromagnetics* 25: 498-502 [Accessed February 2026].

Ref 18.C. 12 Malagoli, D., Lusvardi, M., Gobba, F. and Ottaviani, E. (2004). 50 Hz magnetic fields activate mussel immunocyte p38 MAP kinase and induce HSP70 and 90. *Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology* 137: 75-79. [Accessed February 2026].

Ref 18.C. 13 Malagoli, D., Gobba, F. and Ottaviani, E (2003) Effects of 50-Hz magnetic fields on the signalling pathways of fMLP-induced shape changes in invertebrate immunocytes: the activation of an alternative “stress pathway”. *Biochimica et Biophysica Acta - General Subjects* 1620: 185-190. [Accessed February 2026].

Ref 18.C. 14 Ottaviani, E., Malagoli, D., Ferrari, A., Tagliazucchi, D., Conte, A. and Gobba, F. (2002) 50 Hz magnetic fields of varying flux intensity affect cell shape changes in invertebrate immunocytes: The role of potassium ion channels. *Bioelectromagnetics*, 23:292-297. [Accessed February 2026].

Appendix A Relevant Site Descriptions and Conservation Objectives

The site descriptions and conservation objectives for all relevant MCZs / NCMPAs and the Northeast of Farnes Deep HPMA are presented in **Appendix A Table 1**.

Appendix A Table 1 Relevant site descriptions and conservation objectives

Site Name	Site Description	Conservation Objectives
Holderness Offshore MCZ	<p>The MCZ covers an area of 1,176 km² and is located approximately 11 km offshore from the Holderness coast in the southern North Sea region. It crosses the 12 nautical mile (NM) territorial seas limit and overlaps with the southern North Sea SAC. The seabed of the Holderness Offshore MCZ is predominantly composed of sediment habitats ranging from subtidal sand to subtidal coarse sediment and contains part of a glacial tunnel valley. The varied nature of the seabed means it supports a wide range of species, both on and in the sediment, including multiple species of worms, mussel beds, sponges, starfish and crustaceans (such as crabs and shrimp). The site is also a spawning and nursery ground for a number of fish species, including lemon sole (<i>Microstomus kitt</i>), plaice (<i>Pleuronectes platessa</i>) and European sprat (<i>Sprattus sprattus</i>). Ocean quahog has also been recorded within the site.</p>	<p>Conservation advice states that the North Sea glacial tunnel valleys within the MCZ is in favourable condition and the general management approach is to maintain the feature at a favourable condition. This means that:</p> <ol style="list-style-type: none"> i. Its extent, component elements and integrity are maintained. ii. Its structure and functioning are unimpaired; and iii. Its surface remains sufficiently unobscured for the purposes of determining whether the conditions in paragraphs (i) and (ii) are satisfied. <p>Any obscurement of that feature brought about entirely by natural processes is to be disregarded. Any alteration to that feature brought about entirely by natural processes is to be disregarded.</p> <p>Supplementary advice sets the following objectives for the sedimentary broadscale habitats:</p> <ul style="list-style-type: none"> • Extent and distribution: Recover; • Structure and function: Recover; and • Supporting processes: Maintain. <p>With respect to subtidal coarse sediment, subtidal sand and subtidal mixed sediments within the site, this means that:</p> <p>Its extent is stable or increasing; and</p> <ol style="list-style-type: none"> i. Its structures and functions, its quality, and the composition of its characteristic biological communities (which includes a reference to the diversity and abundance of species forming part of or inhabiting that habitat) are such as to ensure that it remains in a condition which is healthy and not deteriorating.

Site Name	Site Description	Conservation Objectives
Northeast Farnes HPMA	of Deep	<p>The Northeast of Farnes Deep HPMA was designated in June 2023 and overlaps entirely with the Northeast of Farnes Deep MCZ, however they remain as two distinct designations. HPMA's extend protection to the entire marine ecosystem (seabed, water column, processes and all species) within the site. The HPMA is located approximately 55 km offshore from the north Northumberland Coast, in the northern North Sea covering an area of 492 km². The seabed within the HPMA is a mix of highly mosaiced habitats, ranging from</p>
		<p>ii. Any temporary deterioration in condition is to be disregarded if the habitat is sufficiently healthy and resilient to enable its recovery. Any alteration to that feature brought about entirely by natural processes is to be disregarded.</p> <p>Supplementary advice sets the following objectives for ocean quahog:</p> <ul style="list-style-type: none"> ● Extent and distribution: Recover; ● Structure and function: Recover; and ● Supporting processes: Recover. <p>With respect to the ocean quahog within the MCZ, this means that: The quality and quantity of its habitat and the composition of its population in terms of number, age and sex ratio are such as to ensure that the population is maintained in numbers which enable it to thrive. Any temporary reduction of numbers is to be disregarded if the population is sufficiently thriving and resilient to enable its recovery. Any alteration to that feature brought about entirely by natural processes is to be disregarded.</p>
		<p>The conservation objective for the site is to:</p> <ol style="list-style-type: none"> a. Achieve full recovery of the protected feature, including its structure and functions, its qualities and the composition of its characteristic biological communities present within the northeast of Farnes Deep Highly Protected Marine Area, to a natural state, and b. Prevent further degradation and damage to the protected feature, subject to natural change. <p>Such that within the site:</p> <ol style="list-style-type: none"> 1. The ecosystem is allowed to fully recover in the absence of damaging activities such that:

Site Name	Site Description	Conservation Objectives
	<p>coarse sediments through to mixed sediments and mud. These are relatively stable habitats, which support a diverse range of marine flora and fauna such as anemones, worms, molluscs, echinoderms and fish species. These habitats also support birds and marine mammals, with at least seven nationally important seabird species and five marine mammal species recorded within the area. Large areas of muddy habitats cover 27 km² of the HPMA (equivalent to 5% of the site) and are thought to be important for the storage of carbon. At present, this is the only offshore HPMA with blue carbon habitats.</p>	<ol style="list-style-type: none"> a. The ecosystem structure consists of a diverse range of benthic and pelagic communities, habitats and species, including biotic and abiotic components of the ecosystem. These fulfil a variety of functional roles, including supporting key life cycle stages and / or behaviours of marine species. b. The physical, biological and chemical ecosystem processes and functions proceed unhindered, so that the site realises its full ecological potential to deliver goods and services, including habitats and species considered important to the long-term storage of carbon. c. The ecosystem is resilient to change and stressors. <ol style="list-style-type: none"> 2. Any ecosystem changes brought about by the process of removing anthropogenic pressures should be considered in the context of a naturally recovering ecosystem. 3. The HPMA supports our understanding of how marine ecosystems change and recover in the absence of impacting activities. <p>Note that this does not prevent human intervention to enable or facilitate recovery or the prevention of degradation or damage.</p>
<p>Northeast of Farnes Deep MCZ</p>	<p>Northeast of Farnes Deep was designated as a MCZ in January 2013 for subtidal coarse sediment and subtidal sand. Additional features of mixed sediments, subtidal mud and ocean quahog were designated in January 2016. The MCZ is located approximately 55 km offshore from the north Northumberland Coast, in the northern North Sea covering an area of 492 km². The seabed within the MCZ is a mix of highly mosaiced habitats, ranging from coarse sediments through to mixed sediments and mud. These are relatively stable habitats, which</p>	<p>The Conservation Objective for the northeast of Farnes Deep Marine Conservation Zone is that the protected features:</p> <ul style="list-style-type: none"> • so far as already in favourable condition, remain in such condition; and • so far as not already in favourable condition, be brought into such condition, and remain in such condition <p>With respect to Subtidal coarse sediment, Subtidal sand, Subtidal mixed sediments and Subtidal mud within the Zone, this means that</p> <ul style="list-style-type: none"> • Extent is stable or increasing; and

Site Name	Site Description	Conservation Objectives
	<p>support a diverse range of marine flora and fauna such as anemones, worms, molluscs, echinoderms and fish species. These habitats also support birds and marine mammals, with at least seven nationally important seabird species and five marine mammal species recorded within the area.</p>	<ul style="list-style-type: none"> Structures and functions, quality, and the composition of characteristic biological communities (which includes a reference to the diversity and abundance of species forming part of or inhabiting each habitat) are such as to ensure that they remain in a condition which is healthy and not deteriorating. <p>Any temporary deterioration in condition is to be disregarded if the habitats are sufficiently healthy and resilient to enable recovery.</p> <p>Any alteration to the features brought about entirely by natural processes is to be disregarded.</p> <p>With respect to the ocean quahog within the Zone, this means that the quality and quantity of its habitat and the composition of its population in terms of number, age and sex ratio are such as to ensure that the population is maintained in numbers which enable it to thrive.</p> <p>Any temporary reduction of numbers is to be disregarded if the population is sufficiently thriving and resilient to enable its recovery.</p> <p>Any alteration to that feature brought about entirely by natural processes is to be disregarded.</p>
Swallow MCZ	Sands	<p>Swallow Sand Marine Conservation Zone – Conservation Objectives</p> <p>The Conservation Objective for the Swallow Sand Marine Conservation Zone is that the protected features:</p> <ul style="list-style-type: none"> so far as already in favourable condition, remain in such condition; and so far as not already in favourable condition, be brought into such condition, and remain in such condition. <p>With respect to Subtidal coarse sediment and Subtidal sand within the Zone, this means that</p>

Site Name	Site Description	Conservation Objectives
	representing a feature of geological and geomorphological importance.	<ul style="list-style-type: none"> ● Extent is stable or increasing; and ● Structures and functions, quality, and the composition of characteristic biological communities (including the diversity and abundance of species forming part of or inhabiting each habitat) are such as to ensure that they remain in a healthy and not deteriorating condition. <p>Any temporary deterioration in condition is to be disregarded if the habitats are sufficiently healthy and resilient to enable recovery.</p> <p>Any alteration to the features brought about entirely by natural processes is to be disregarded.</p> <p>With respect to the geological / geomorphological feature ‘Swallow Hole’ within the Zone, this means that—</p> <p>The quality, structure, and extent of the glacial tunnel valley feature are such as to ensure that it remains in a natural, stable condition, consistent with its role as a representative geological feature of the northern North Sea.</p> <p>Any alteration to this feature brought about entirely by natural processes is to be disregarded.</p>

National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United

Registered in England and Wales
No. 4031152
nationalgrid.com