The Great Grid Upgrade

Eastern Green Links 3 and 4

Issue number: v0.1

Eastern Green Link 3 and Eastern Green Link 4

Environmental Impact Assessment
Scoping Report

Volume 2, Part 2: Appendices
ES Chapter 6, Appendix 6.A: Arboriculture Survey Methodology

July 2024

nationalgrid

Contents

1. Arboriculture Survey Methodology

1.1 Introduction

1.1.1 This arboricultural assessment will consider the potentially direct and indirect impacts on trees that may arise from the construction and operation of the English Onshore Scheme.

1.1.2 This chapter of the Scoping Report describes the methodology to be used within the arboricultural impact assessment (AIA). It sets out the relevant legislation, planning policy context and technical guidance used to inform the scope of the arboricultural assessment and summarises any consultation and engagement in relation to arboriculture undertaken to date. It provides an overview of the baseline conditions relevant to arboriculture within/around the Scoping Boundary, the measures which will be incorporated into the English Onshore Scheme to mitigate unnecessary tree impacts, the likely significant impacts to be considered within the assessment, and how these likely significant impacts will be assessed for the purpose of an AIA.

1.1.3 This chapter should be read in conjunction and considered alongside the following chapters found in Volume 1:

- **Part 2, Chapter 4: English Onshore Scheme**
- **Part 2, Chapter 5: EIA Methodology**
- **Part 2, Chapter 6: Biodiversity**
- **Part 2, Chapter 7: Cultural Heritage**
- **Part 2, Chapter 8: Landscape and Visual Amenity**

1.2 Relevant Legislation, Planning Policy and Technical Guidance

1.2.1 This section identifies the relevant legislation, national and local policy and guidance which has informed the scope of the arboricultural assessment:

Legislation

1.2.2 A summary of the key legislation considered, but not limited to, in the scope of arboriculture effects is outlined in Table 1.1.

Table 1.1 – Legislation relevant to arboriculture

Legislation	Legislative Context	Section Considered
Environment Act 2021 (Ref 1.1)	The Environment Act 2021 has two main functions: to give a legal framework for environmental governance in the UK, and to bring in measures for improvement of	Section 1.6 Scope of Assessment.

Legislation	Legislative Context	Section Considered
	the environment in relation to waste, resource efficiency, air quality, water, nature and biodiversity, and conservation. This Act also brings in a 'Duty to Consult' requirement for the local planning authority (LPA) before felling of street trees. There are exemptions to this requirement which should be established during the design development process.	
Town and Country Planning (Tree Preservation) (England) Regulations 2012 (Ref 1.2)	Tree Preservation Orders (TPOs) are administered by the LPA and made to protect trees that provide a significant amenity benefit. Under these regulations it is an offence to cut down, top, lop, uproot, wilfully damage/destroy a TPO tree, or to cause or permit such actions, without LPA consent.	Section 1.4 Baseline Conditions and Section 1.6 Scope of Assessment.
The Natural Environment and Rural Communities (NERC) Act 2006 (Ref 1.3)	Species and Habitats of Principal Importance in England are listed under Section 41 of the NERC Act 2006. Section 41 lists detail habitats that are of principal importance for the conservation of biodiversity in England and should be used to guide decision-makers such as local and regional authorities when implementing their duty to have regard for the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006.	Section 1.4 Baseline Conditions and Section 1.6 Scope of Assessment.
The Hedgerows Regulations 1997 (Ref 1.4)	Under these regulations, it is an offence to remove a hedgerow (as defined within the regulations) without obtaining LPA permission. Should the hedgerow be deemed unimportant according to the criteria within the Regulations, the LPA is obliged to allow removal. If the hedgerow qualifies as 'Important' under the Regulations then the LPA must decide whether the reasons for removal justify the loss of an 'Important Hedgerow', with a presumption for retention.	Section 1.4 Baseline Conditions and Section 1.6 Scope of Assessment.
Forestry Act 1967 (Ref 1.5)	The felling of trees is controlled by the Forestry Act 1967. In the event that trees need to be felled, a felling licence may be required. There are exemptions to this	Section 1.4 Baseline Conditions and Section 1.6 Scope of Assessment.

Legislation	Legislative Context	Section Considered
	requirement which should be established during the design development process.	

Planning Policy

1.2.3 A summary of the planning policies at a national and local level relevant to the scope of arboriculture effects are given in Table 1.2 and Table 1.3 respectively.

Table 1.2 – National planning policy relevant to arboriculture

Policy Reference	Policy Context	Section Considered
National Policy		
Overarching National Policy Statement for Energy (EN-1) 2024 (Ref 1.6)		
Paragraph 5.4.14	This paragraph defines ancient woodland, ancient trees and veteran trees as irreplaceable habitats which "*would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity.*"	Section 1.4 Baseline Conditions and Section 1.6 Scope of Assessment.
Paragraph 5.4.15	This paragraph states *"Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland"* and "*Ancient and veteran trees found outside ancient woodland are also particularly valuable."* With reference to the Keepers of Time White Paper (Ref 1.7), this paragraph also states "*the government's policy for ancient and native trees and woodlands in England sets out the government's commitment to maintain and enhance the existing area of ancient woodland, maintain and enhance the existing resource of known ancient and veteran trees, excluding natural losses from disease and death, and to increase the percentage of ancient woodland in active management."*	Section 1.4 Baseline Conditions and Section 1.6 Scope of Assessment.
Paragraph 5.4.32	This paragraph states *"Applicants should include measures to mitigate fully the direct and indirect effects of development on ancient woodland, ancient and veteran trees or other irreplaceable habitats during both construction and operational phases."*	Section 1.6 Scope of Assessment Section 1.7 Assessment Methodology

Policy Reference	Policy Context	Section Considered
Paragraph 5.4.53	This paragraph states *"The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of any irreplaceable habitats, including ancient woodland, and ancient and veteran trees unless there are wholly exceptional reasons*[1] *and a suitable compensation strategy exists."*	Section 1.7 Assessment Methodology
National Policy Statement for Electricity Networks Infrastructure (EN-5) (Ref 1.8)		
Paragraphs 2.9.16 to 2.9.17	These paragraphs outline design principles of the Holford Rules (developed by Lord Holford in 1959 and updated in the 1990s) for routing overhead lines to maximise the screening benefit of trees.	Section 1.4 Baseline Conditions and Section 1.6 Scope of Assessment.
Paragraphs 2.9.18 to 2.9.19	These paragraphs outline design principles of the Horlock Rules (established by the National Grid in 2009) which state applicants should seek to: "*avoid…nationally designated areas of the highest amenity, cultural or scientific value*" and "*protect as far as reasonably practicable areas of local amenity value, important existing habitats and landscape features including ancient woodland, historic hedgerows*…"	Section 1.4 Baseline Conditions and Section 1.6 Scope of Assessment.
National Planning Policy Framework (NPPF) (2023) (Ref 1.9)		
Paragraph 186(c)	The NPPF states that *"development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists."*	Section 1.7 Assessment Methodology

Table 1.3 – Local planning policy relevant to arboriculture

Local Authority Plan/Strategy	Summary of Relevant Policies Relating to Arboriculture
East Lindsey District Council (ELDC): East Lindsey Local Plan Core Strategy, 2018 (Adopted 2018) (Ref 1.10)	SP23: Landscape The distinctive character of the district's landscapes whether they are of cultural, natural or historic significance, should not be compromised by developments. In particular, the highest level of protection will be given to the

[1] For example where the public benefits (including need) of the nationally significant energy infrastructure would clearly outweigh the loss or deterioration of the habitat.

Local Authority Plan/Strategy	Summary of Relevant Policies Relating to Arboriculture
	Lincolnshire Wolds Area of Outstanding Natural Beauty, which is designated at a national level because of its landscape quality. SP24: Biodiversity and Geodiversity Planning permission will only be granted for development which directly or indirectly leads to loss or harm to ancient woodland or aged or veteran trees, in exceptional circumstances, where the developer can demonstrate that the wider benefits of that loss clearly outweigh the protection of the trees.
Boston Borough Council (BBC) and South Holland District (SHD): South East Lincolnshire Local Plan, 2011-2036 (Adopted 2019) (Ref 1.11)	This is a regional plan which is shared partnership between BBC, SHD and Lincolnshire County Council (LCC). Policy 2: Development Management Development proposals will be permitted provided sustainable development considerations are met with specific reference to assessing impacts on trees and habitats. Policy 28: The Natural Environment Development proposals should aim to protect and enhance natural assets inclusive of existing trees. Furthermore development proposals would not be permitted where, taking account compensation and mitigation measures, should they lead to adverse effects to nationally or locally-designated sites and protected or priority habitats.
North East Lincolnshire Council (NELC): North East Lincolnshire Council New Local Plan, 2013-2032 (Adopted 2018) (Ref 1.12)	Policy 41: Biodiversity and Geodiversity Development proposals shall minimise the loss of biodiversity features, or where loss is unavoidable and justified ensure appropriate mitigation and compensation measures are provided. Policy 42: Landscape Retain and protect trees and hedgerows which offer value for amenity, biodiversity and landscape.

Local Authority Plan/Strategy	Summary of Relevant Policies Relating to Arboriculture
Borough Council of King's Lynn and West Norfolk (BCKLWN): Local Development Framework – Core Strategy, 2011 (Adopted 2011) (Ref 1.13)	Policy CS12: Environmental Assets Development proposals which protect and enhance the environment, landscape and biodiversity shall be encouraged and supported. This specifically includes nationally or locally designated sites and protected or priority habitats. The policy also states development proposals should seek to avoid, mitigate or compensate for any adverse impacts on biodiversity.
Fenland District Council (FDC): Fenland Local Plan, 2014 (Adopted 2014) (Ref 1.14)	Policy LP16: - Delivering and Protecting High Quality Environments across the District Indicates new development proposals should retain and incorporate existing trees and hedgerows. Policy LP19: Natural Environment Outlines that development should avoid adverse impacts on existing biodiversity and geodiversity features as a first principle. Where adverse impacts are unavoidable, they must be adequately and proportionately mitigated. If full mitigation cannot be provided, compensation will be required as a last resort where there is no alternative.

Technical Guidance

1.2.4 The AIA will be carried out in accordance with the following good practice and guidance documents:

- British Standard (BS) 5837:2012 – Trees in relation to design, demolition and construction – Recommendations (Ref 1.15). BS 5837:2012 provides a framework which sets out how trees should be surveyed and how tree constraints should be assessed and considered in the context of development.
- Natural England and Forestry Commission 'Standing Advice' for ancient woodland, ancient trees and veteran trees: advice for making planning decisions (Ref 1.16). Standing Advice recommends protective buffer zones for ancient woodland and greater protective buffer zones for individual ancient and veteran trees (when compared to BS5837:2012).

1.3 Consultation and Engagement

1.3.1 To date no engagement been undertaken specific to arboriculture. It is anticipated that feedback in relation to this topic and the scope of works will be gained following

consultation on this Scoping Report, both for arboriculture, and those related chapters identified in Paragraph 1.1.3.

1.4 Baseline Conditions

Study Area

1.4.1 The arboricultural study area will be based on the indicative construction working areas, referred to as the 'likely working areas', which will fully contain the following design/construction components:

- the LCS converter station and DCSS
- the new Walpole substation and converter stations
- the underground HVDC and HVAC cables
- supplementary works (including realignment) to existing 400 kV overhead lines
- any land required to facilitate the construction of the above i.e. construction compounds, haul roads, the working width required for cable installation etc.

1.4.2 The arboricultural study area is defined as a 30 m buffer zone around the likely working areas. The 30 m buffer zone is considered sufficient to identify veteran trees located outside of the likely working areas but whose buffer zone may be compromised by construction activities.

Data Gathering Methodology

1.4.3 The AIA will be informed by a desk study and arboricultural surveys.

Desk Study

1.4.4 The desk study will be completed prior to commencing the arboricultural surveys.

1.4.5 A desk study will use publicly accessible data including the Woodland Trust's Ancient Tree Inventory, Multi-Agency Geographic Information for the Countryside (MAGIC) maps) and local authority records. The desk study will record trees known to be within the following classifications:

- ancient, veteran and notable trees;
- ancient woodland;
- traditional orchards;
- tree preservation order (TPO); and
- conservation area.

Arboricultural Surveys

1.4.6 No data is yet available from arboricultural surveys to inform the scoping report due to the early stage of the Projects. It is assumed that the arboricultural surveys would commence in Autumn 2024 (once the likely working areas have been identified and the proposed arboricultural study area confirmed) with remaining arboricultural surveys to

be completed in 2025. The arboricultural surveys will be undertaken to capture data for trees falling into the categories below:

- woodlands;
- unverified veteran trees;
- TPO trees;
- important hedgerows; and
- noteworthy trees and groups (noteworthy trees are defined as Category A and B trees as set out in Table 1 of BS 5837:2012 (Ref 1.15).

1.4.7 It is unlikely a topographical survey will be available for the area of the English Onshore Scheme therefore the spatial positioning of individual trees, groups of trees and woodlands shall be recorded to LiDAR data, Bluesky National Tree Map data and aerial imagery using handheld GPS devices (i.e. mobile phone).

1.4.8 The arboricultural surveyor will collectively record trees as a group where they form a cohesive arboricultural feature either aerodynamically, visually, or culturally. Trees of merit such as veteran trees within groups will (where possible) be surveyed as individuals.

1.4.9 Linear collections of trees which form hedges will be recorded as a linear group. This survey is not a hedgerow assessment; however, the findings of these surveys may be used to inform the biodiversity assessment (**Part 2, Chapter 6: Biodiversity**).

1.4.10 The arboricultural survey will identify the noteworthy arboricultural features and record these as either high or moderate quality as defined by A and B grade in BS5837:2012.

1.4.11 Data recorded during the arboricultural survey will be entered into a digital platform. The data capture proforma will include:

- a sequential reference number;
- the species (listed as common name);
- the height (to nearest metre);
- the stem diameter (measured at 1.5 m in height), for groups and woodlands the largest diameter will be recorded;
- crown spread (largest spread to the nearest metre);
- the life stage (young, semi-mature, early-mature, mature, veteran);
- general observations;
- estimated remaining contribution;
- the Root Protection Area (RPA); and
- the category, typically either A or B and subcategories of 1, 2 or 3.

1.4.12 A canopy cover map will be created using remote sensing LiDAR data and shall be available prior to the arboricultural survey. This map will represent a baseline of all tree canopies and be a guide to inform where arboricultural surveys are required. LiDAR will also provide the spatial basis of those trees not deemed moderate or above quality, so that they may be assessed within the AIA.

Current Baseline

1.4.13 At the time of writing, it is unknown when the arboricultural study area shall attain a width of 160 m however it is anticipated that baseline data from the desk study shall be gathered prior to submission of the Preliminary Environmental Information Report (PEIR).

Future Baseline

1.4.14 It is recognised that there are a number of other proposed and committed developments within the surrounding area that could alter the future baseline in the absence of the English Onshore Scheme. The potential for cumulative effects will be considered later in the ES process according to the approach outlined within **Part 4, Chapter 35: Cumulative Effects**.

1.5 Design and Control Measures

1.5.1 A high-level optioneering study (the CPRSS Study as described **in Part 1, Chapter 3: Consideration of Alternatives**) has been undertaken to identify the preferred routeing and siting of the proposed infrastructure to ensure that environmental effects would be avoided. As part of the design process, a number of design and control measures will be proposed to reduce the potential for impacts on arboricultural features. These measures will evolve as part of design development and in response to consultation. These measures will be fed iteratively into the assessment process. These measures typically include those that have been identified as good or standard practice through the design phase and construction phase.

Design Phase

1.5.2 As part of design development, where reasonably practicable, siting of the English Onshore Scheme will avoid:

- protective buffer zones of ancient woodland and veteran trees (Ref. 1.15);
- RPAs of high and moderate quality trees (as detailed in Section 1.4); and
- root protection buffers of low quality trees (as detailed in Section 1.5).

Construction Phase

1.5.3 A range of standard measures for the English Onshore Scheme are likely to be adopted for the duration of the construction phase. Design and Control measures relevant to arboriculture would be outlined in the **Outline Code of Construction Practice** (Outline CoCP) which shall be prepared to accompany the ES and accord with technical guidance listed in paragraph 1.2.4. The Outline CoCP will include measures relevant to the control and management of impacts related to arboriculture. Construction contractor(s) will apply the relevant protective principles set out in BS 5837:2012: Trees in relation to design, demolition and construction' to trees within the likely working areas which will be preserved through the construction phase, and to trees outside of the working areas where such measures do not hinder or prevent the use of the relevant working areas for construction. All works to high grade trees, including trees covered by a TPO and veteran trees, will be undertaken or supervised by a suitably qualified arboriculturist.

1.6 Scope of the Assessment

1.6.1 The AIA will consider the construction phase of the English Onshore Scheme in line with BS 5387:2012 Trees in relation to design, demolition and construction Recommendations.

Potential Sensitive Receptors

1.6.2 The potentially impacted receptors include all arboricultural features located within and near to the likely working areas as described in Sections 1.6.3 to 1.6.6 below.

Ancient and veteran trees

1.6.3 Trees either verified (via the Woodland Trust's Ancient Tree Inventory) or unrecorded (based on surveyor initial assessment) will be reported with a buffer zone equal to 15 x stem diameter or 5 m beyond the canopy spread, whichever is the greater. All surveyor assessed ancient/veteran trees should undergo further bespoke assessment using an industry accepted assessment methodology (such as 'Raven') or verified via the Woodland Trust's Ancient Tree Inventory program.

High and moderate quality trees

1.6.4 High and moderate quality trees (A and B grade) will be reported with RPAs equal to 12 x stem diameter and canopy extents illustrated as a circle using the largest recorded spread measurement.

Low quality trees

1.6.5 Low quality arboricultural features will be plotted based on remote sensing data and an offset root protection buffer of 3 m applied to the canopy edge of the feature.

Hedgerows

1.6.6 All hedgerows will be reported as low quality features unless other technical disciplines (such as biodiversity/cultural heritage) identify the hedges as being 'important hedgerows'. For these important hedgerows the dominant woody species will be recorded and RPAs calculated (using the largest stem size) from the centre line of the arboricultural feature.

Likely Arboricultural Impacts

1.6.7 Likely construction activities are outlined in **Part 2, Chapter 4: English Onshore Scheme**. The activities with the potential to cause arboricultural impacts include:

- Construction and installation of underground HVAC and HVDC cables, including the excavation and backfill of trenches and earthwork operations.
- Construction of trenchless crossings, including at the proposed landfall sites.
- Supplementary diversions to existing 400 kV OHL.
- Fixed plant areas including the substation, converter stations (and DCSS) and other static plant facilities, as required.

- Temporary construction areas inclusive of compounds, access route and laydown/material storage areas.

1.7 Assessment Methodology

Reporting

1.7.1 Arboriculture does not readily align to the wider EIA methodology and there is no industry standard, guidance or consensus on how arboriculture should be considered or managed as part of the EIA process or an agreed definition for significant arboricultural effects, and for this reason it is typically managed as a stand-alone technical assessment in accordance with BS5837 and included as a technical appendix to the ES (i.e. the AIA Report).

1.7.2 The arboricultural surveys will commence when the likely working areas have been identified. Following the completion of the arboricultural surveys, the data will be used to produce a baseline arboricultural survey schedule and a tree constraints plan developed within a digital platform. The AIA report will be prepared and as noted above, will be presented as an appendix to the ES.

1.7.3 The baseline arboricultural survey schedule and a tree constraints plan will comprise of all surveyed arboricultural features from the arboricultural survey and include:

- individual trees – tree stem location based on either topographic survey, LiDAR, aerial imagery or GPS, canopy extents illustrated as a circle using the largest recorded crown spread measurement and an RPA as a circular area.
- tree groups, woodlands and hedgerows – a polygon shape representing the extent of the tree stems plotted whilst in the field. The RPA buffer applied to the polygon based on the largest tree stem diameter recorded for that feature.

Root Protection Areas

1.7.4 Other than ancient and veteran trees, the RPA will be calculated on the 12 x stem diameter measurement and capped at the maximum RPA measurement of 15 m radius in line with BS 5837 2012.

1.7.5 To provide appropriate protection measures for ancient and veteran trees, the AIA will where reasonably practicable adopt the Standing Advice (from Natural England and the Forestry Commission (Ref 1.16) for calculating buffer zones:

> *"for ancient or veteran trees (including those on the woodland boundary), the buffer zone should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5 metres from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter. This will create a minimum root protection area"*.

Arboricultural Impact Assessment

1.7.6 The impact of the English Onshore Scheme will be assessed using the baseline arboricultural survey schedule and tree constraints plan and will be reported in an AIA, submitted as an appendix to the ES.

1.7.7 The AIA will consider the likely impacts of the English Onshore Scheme on arboricultural features. The impacts will be assessed for all arboricultural features

whether captured in the arboricultural survey or the LiDAR canopy data. Impacts are adverse and permanent unless otherwise stated.

1.7.8 The AIA will be developed using NGET's vegetation management zones with a focus on the removed and affected managed zones.

1.7.9 The AIA will assess impacts for each of the sections separately, whilst also informing on the total number of arboricultural features impacted. The sections for reporting are defined as:

- Landfalls: Theddlethorpe
- Landfalls: Anderby Creek
- Section 1: Landfalls – Bilsby (inclusive of LCS Converter Station Area)
- Section 2: Bilsby – Welton le Marsh
- Section 3: Welton le Marsh – Little Steeping
- Section 4: Little Steeping – Sibsey Northlands
- Section 5: Sibsey Northlands – Hubbert's Bridge
- Section 6: Hubbert's Bridge – Moulton Seas End
- Section 7: Moulton Seas End – Foul Anchor
- Section 8: Foul Anchor – Walpole (inclusive of Walpole Station Area)

1.7.10 Tree impacts will be shown indicatively on a Tree Impacts Plan which will be included in the AIA. The figure shall spatially illustrate the extent of tree removal, potentially impacted and retained arboricultural features.

1.7.11 The AIA will set out design and control measures to reduce the impact on retained arboricultural features. These design and control measures will be included to the Outline CoCP.

Sensitivity, Magnitude and Level of Impact matrices

1.7.12 As noted above, there is no recognised or consolidated methodology or practice for the determination of significance in relation to arboricultural effects. Rather than establishing 'significance of effect', as is the standard approach in wider EIA methodology, the AIA will focus on the 'level of impact'. The level of impact matrix, based on sensitivity and magnitude, will be used to establish the level of impacts as presented in Tables 1.4 to 1.6. Due to the size of the English Onshore Scheme, individual arboricultural features will not be assessed in terms of the level of impact (e.g. T1), rather the level of impact will be assessed for a geographical area or by features with collective attributes. The information from the AIA will be used to inform the assessment of likely significant effects in relation to landscape, visual, historic environment and biodiversity effects and will form an appendix to the ES.

Table 1.4 – Sensitivity Matrix

Sensitivity	Example of potential characteristic
High	• Arboricultural features that are registered on the Ancient Tree Inventory and the extent has been verified on site.

Sensitivity	Example of potential characteristic
	• Arboricultural features that have been identified during the arboricultural surveys as veteran. • Arboricultural features that are within the Ancient Woodland Inventory, and the extent has been verified on site.

Medium	• Arboricultural features that have been classified as Category 'A' in accordance with BS 5837:
	  ○ Trees that are particularly good examples of their species, especially if rare or unusual, and are considered to have high arboricultural value.
	  ○ Trees/woodlands of particular visual importance within the landscape.
	  ○ Trees that are essential components of groups, or of formal or semi-formal arboricultural features.
	• Trees/woodlands of particular conservation, historical, commemorative or other value.
	• Forests or woodlands that are a particularly good example of their type and are likely to include diverse, structured, semi-natural, and undisturbed ecosystems.
	• Forests or woodlands that exhibit high public usage.
	• Forests or woodlands with high commercial value or potential.
	• Any woodland identified for protection within the local planning authority's forestry and woodland strategy.

Low	• Arboricultural features that have been classified as Category 'B' in accordance with BS 5837:
	  ○ Trees due to impaired physiological or structural condition are downgraded from Category 'A'.
	  ○ Trees lacking special quality.
	  ○ Trees with limited conservation or other cultural value.
	  ○ Trees present in numbers, usually as groups or woodlands, such that they attract a higher collective rating than they might as individuals or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.
	• Forests or woodlands with some high-quality characteristics but which might be disturbed or damaged e.g. from browsing pressure, windthrow or poor management.
	• Forest or woodlands lacking special characteristics to be considered high value.
	• Forests or woodlands with limited public usage.
	• Forests or woodland with limited commercial value or potential.

Sensitivity	Example of potential characteristic
	• Trees covered by a Tree Preservation Order.

Negligible	• Arboricultural features that have been classified as Category 'C' or Category 'U' in accordance with BS 5837:
	  ○ Trees that are of low arboricultural value including unremarkable trees of very limited merit.
	  ○ low or transient landscape benefits.
	  ○ no material conservation or other cultural value.
	  ○ Young trees less than 150 mm in stem diameter.
	• Trees of very low quality which have poor structural and/or physiological condition and are not likely to be retained for more than 10 years in the current context.
	• Woodlands in poor condition, poorly adapted to soils and/or climate, or significantly affected by pests, diseases or other abiotic factors.

Table 1.5 – Magnitude Matrix

Magnitude of impact	Description of potential impact
High	A noticeable change to the tree population over a wide area or an intensive change over a limited area.
Medium	Small changes to the tree population over a wide area or noticeable change over a limited area.
Low	Very small changes to the tree population over a wide area or small changes over a limited area.
Negligible	No discernible change to the tree population.

Table 1.6 – Level of impact

		Sensitivity of receptor/receiving environment to change/effect			
		High	**Medium**	**Low**	**Negligible**
Magnitude of change/ effect	**High**	**Major**	**Major**	**Moderate**	Negligible
	Medium	**Major**	**Moderate**	Minor	Negligible
	Low	**Moderate**	Minor	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

1.8 Assessment Limitations and Assumptions

1.8.1 The following limitations and assumptions have been identified:

- When undertaking the arboricultural surveys where access is restricted, tree measurements may be estimated.
- When undertaking the arboricultural surveys in the absence of information about stem diameter, a buffer zone of 3 m beyond canopy spread will be applied to low quality arboricultural features.
- Arboricultural data either as part of the desk study arboricultural surveys or collected does not constitute a health and safety survey.

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Ref 1.4 His Majesty's Stationery Office (1997) The Hedgerows Regulations 1997

Ref 1.5 His Majesty's Stationery Office (1967) The Forestry Act 1967

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Ref 1.7 Department for Environment, Food and Rural Affairs (2022) Keepers of time: ancient and native woodland and trees policy in England Net Zero

Ref 1.8 Department for Energy Security and Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5)

Ref 1.9 Department for Levelling Up, Housing and Communities (2023). National Planning Policy Framework.

Ref 1.10 East Lindsey District Council (2018) East Lindsey Local Plan Core Strategy (Adopted 2018)

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Environmental Impact Assessment
Scoping Report

Volume 2, Part 3: Appendices
ES Chapter 21, Appendix 21.A: EGL 3 MMO Non-Statutory Consultation Response

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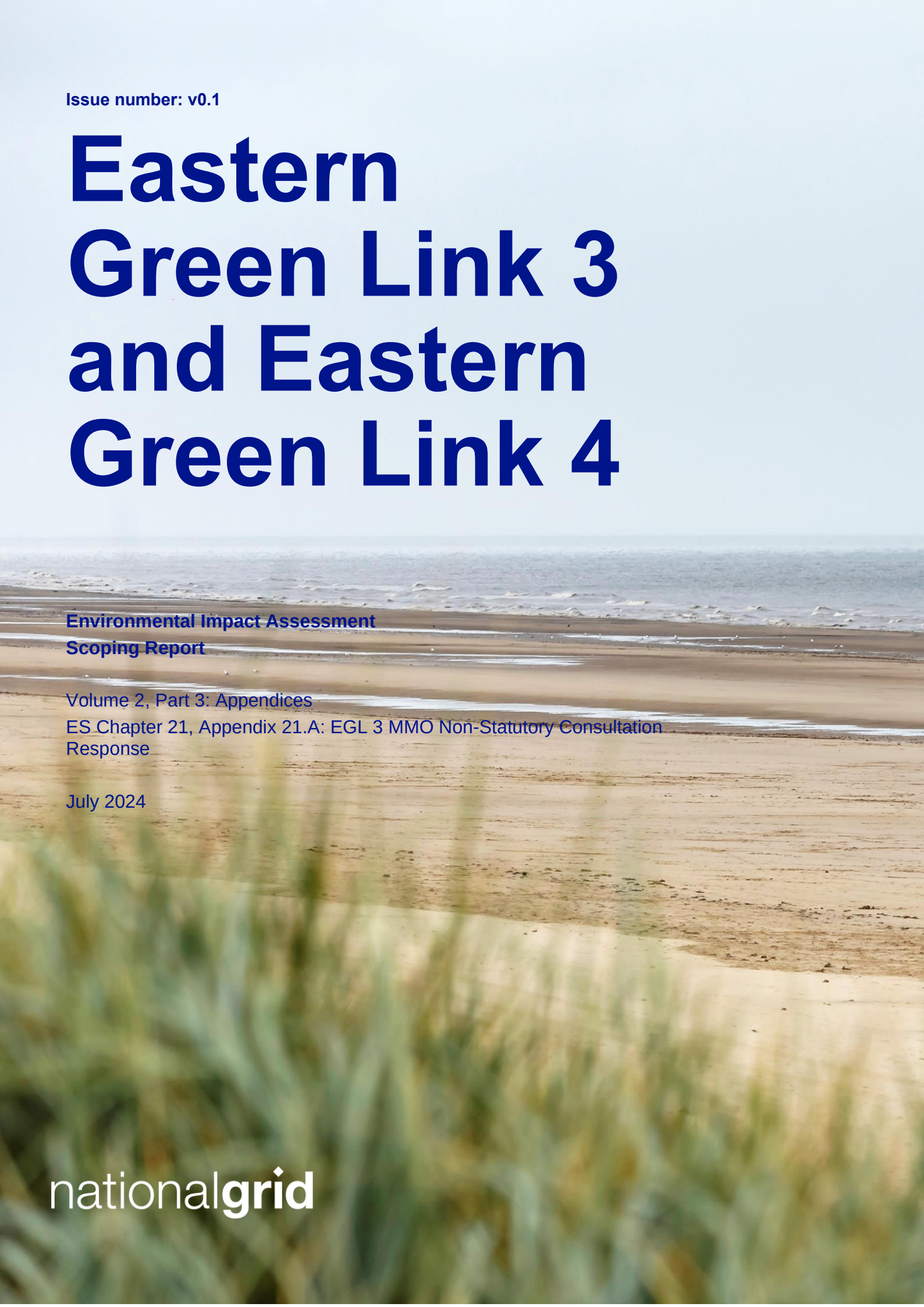

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17 May 2024

Dear Miss James

Eastern Green Link 3 (EGL3) – MMO Non-Statutory Consultation Response

National Grid Electricity Transmission (NGET) submitted an enquiry to the Marine Management Organisation (MMO) on 18 April 2023 **(ENQ/2023/00060).** As part of this enquiry, a non-statutory environmental report entitled "Eastern Green Link 3 Marine Environmental Appraisal Non-Statutory Scoping Report" ("the report") was submitted to the MMO on 20 December 2023.

The MMO has reviewed the report in consultation with our scientific advisors at the Centre for Environment, Fisheries and Aquaculture Science (Cefas), and other relevant consultees. The MMO has the following comments to make:

1. Fisheries and Fish Ecology

1.1. The evidence base proposed for use in the assessment is generally appropriate and makes use of a range of publicly available data, information and publications. The relevant marine fish species found across the study area have been identified, as well as the migratory species which have protected status namely; river lamprey (*lampetra fluviatilis*) and sea lamprey (*Petromyzon marinus*) which are features of the Humber Estuary special area of conservation (SAC), and European smelt (Osmerus eperlanus) which is found in the North East of Farnes Deep Highly Protected Marine Area (HPMA).

1.2. The report makes reference to the use of Coull *et al.* (1998), Ellis *et al.* (2012) and Aires (2014) to identify the spawning and nursery grounds that overlap the Eastern Green Link 3 (EGL3) study area and the spawning seasons of the relevant fish species. The data sources used are appropriate and the relevant information has been summarised in Table 8-7.

1.3. In Table 8-7, the spawning zone for Atlantic herring (*Clupea harengus*) is stated as 'pelagic' but should be corrected to 'demersal', as the species lays eggs on gravel substrates. Also in Table 8-7, the spawning season for Atlantic herring is indicated as November to January (inclusive) which is incorrect (these spawning months refer to the Downs herring stock in the English Channel and southern North Sea). The table should be corrected to show the spawning season for the Banks/Dogger stock as August to October (inclusive) and for the Buchan stock as August to September (inclusive), see map in Annex 1 taken from Coull *et al.* (1998) and Ellis *et al.* (2012). This comment also applies to Table 8-12.

1.4. Anglerfish are indicated as having a spawning season of January to April inclusive, however, using Ellis *et al.* (2013) the spawning season runs January to June inclusive. This should be corrected in Table 8-7. There may be further species which appear to have incorrect spawning seasons shown in Table 8-7 (e.g. European hake), so the MMO recommends that this table is revisited, and corrections made, where appropriate. This comment also applies to Table 8-12.

1.5. Sandeel (*Ammodytes spp*.) and Atlantic herring have been identified as species that are particularly vulnerable to habitat disturbance due to both species being demersal spawners that lay eggs on seabed substrates, as well as sandeel having a close affinity to the seabed due to their burrowing nature. The report outlines the approach to determining areas of sandeel habitat and potential herring spawning habitat for the Marine Environmental Assessment (MEAp) which will include the use of particle size analysis (PSA) data obtained through grab sampling and vibrocoring in the Study Area, and a minimum of 10 years of International Herring Larvae Surveys (IHLS) data. It is proposed to follow the potential herring spawning habitat mapping methodology described in MarineSpace (2013) and use Latto *et al.* (2013) for mapping sandeel habitat. The approach and data described are appropriate, however please see the above points.

1.6. Concerning the PSA data obtained through grab sampling and vibrocoring, the MMO understands that these sediment samples will be collected as part of the intertidal and subtidal benthic surveys described in Section 7.2.1. Assuming that the proposed benthic survey has not yet been carried out, the MMO, in consultation with Cefas, recommends that you (the Applicant) ensure that there is good sediment sampling coverage across the whole cable corridor route, ideally with grab sampling every 1km in areas of historic herring spawning habitat (see Coull *et al.,* 1998). Whilst geophysical surveys can provide a broad indication of seabed sediment types, the data cannot be reliably used to determine the component fractions of sediments that are needed to establish the suitability/unsuitability of sediments for spawning herring and sandeel habitats.

1.7. The report also refers to the upcoming Sandeel and Herring report by MarineSpace. It should be noted that the MMO, in consultation with Cefas, are content with the new methods and these have been approved. Therefore, the MMO recommends contacting MarineSpace to ask if their new methods are now available. The new methods incorporate additional sediment datasets from the

Cefas OneBenthic tool, which may help improve the coverage of PSA data across the study area.

1.8. The most recent 10 years of IHLS data should be used to inform the herring potential spawning habitat assessment.

1.9. Generally, the appropriate receptors have been scoped into the assessment, although there are some changes required (see above points). Fish species with a demersal life stage will be scoped into the assessment of impacts from temporary habitat loss/seabed disturbance during all phases of the development, whereas entirely pelagic species will be scoped out. The MMO agrees that this is appropriate.

1.10. Fish species with a demersal life stage will be scoped into the assessment of impacts from permanent habitat loss during the construction and operation phases. This is also appropriate. However, unless assurance can be provided that all cable protection will be removed at the end of the project's lifetime, then the MMO recommends that fish with a demersal life stage are also scoped into the assessment for the decommissioning stage.

1.11. Fish species with a demersal life stage will be scoped into the assessment of impacts from temporary increase and deposition of suspended sediments from pre-sweeping during construction and decommissioning, which the MMO agrees with. However, all fish species have been scoped out of the assessment for these same impacts during seabed preparation work. For all species except herring, the MMO, in consultation with Cefas, is content with this decision. However, it is considered that herring should be scoped in at the construction and decommissioning phases, on the basis that increased suspended sediment and deposition caused by cable burial, trenching, and pre-lay grapnel run activities have the potential to cause smothering of eggs and newly hatched larvae in areas of herring spawning habitat.

1.12. Electromagnetic changes / barrier to species movement caused by electromagnetic fields (EMF) has been scoped in for all fish during the operational phase, which the MMO agrees with. However, impacts from temperature increase from the presence of cables has been scoped out of further assessment for all species with a demersal life stage. The MMO notes that the cable burial risk assessment has not been carried out yet, so the minimum cable burial depth is not yet known. For this reason, the MMO, in consultation with Cefas, recommends scoping in the impact of temperature increase from cables during operation due to the potential for sediment heating in areas of sandeel and herring spawning habitats.

1.13. The MMO notes the following minor corrections required for the MEAp:

- In Section 8.4.1.3 the Latin name for river lamprey is given as '*Lampetra fluviatilistwaite*'. This should be corrected to *lampetra fluviatilis*.

- Section 8.4.1.4 refers to smooth hound (*Mustelus mustelus*). It should be noted that there are no recent confirmed records of common smooth-hound

(*Mustelus mustelus*) being captured in UK waters. A genetic study (Farrell et al., 2009) confirmed that all specimens investigated were found to be starry smooth-hounds (*Mustelus asterias*). Therefore, it may be more appropriate to refer to Mustelus spp. in the MEAp.

- Section 8.4.1.4 refers to common skate (*Dipturus batis*), however this is now considered to be two species; blue skate (*Dipturus flossada*) and flapper skate (*Dipturus intermedia*).

2. Shellfisheries

2.1. The MMO, in consultation with Cefas, notes the following minor corrections required for Table 15-1: Summary of the Impacts to be Included with the MEA – Physical and Biological Receptors) for Shellfish:

- Barrier to species movement should be scoped in for Construction and Decommissioning if rock armour or other physical cable protection utilised.
- Release of contaminated sediments should be scoped in for Construction.
- Habitat loss for Shellfish at decommissioning: if cable protection is required to be removed then it should be scoped in.

2.2. Timing of works should be considered as a mitigation measure to minimise any impacts upon berried/spawning/overwintering shellfish or larval phases where possible, especially Nephrops, Lobster, Crab and cockle.

2.3. The MMO, in consultation with Cefas, considers that the methodology used to prepare and gather evidence is to standard practice for applications of this type. Desk-based, survey and statistical landings data should reflect the most recent sources. The report states that *'Interviews with local and regional fisheries stakeholders will be conducted to establish the baseline. Where significant impacts are identified, consultation will be undertaken with local and regional fisheries stakeholders to agree proportionate and effective mitigation, and any residual effects presented'*. Due to the importance of the shellfisheries within the location, this will be expected.

2.4. In Section 15.2 of the report, the MEAp structure is listed. The MMO, in consultation with Cefas, recommends that the Commercial Fisheries section would be best placed in proximity to the Fish and Shellfish chapter.

2.5. In response to other sources of information, references for recent assessments are provided below:

- Edible crab (Cancer pagurus) larvae surveys off the east coast of England: implications for stock structure D.R. Eaton, J. Brown, J.T. Addison, S.P. Milligan, L.J. Fernan 2003. Fisheries Research 65 (2003) 191–199
- Edible crab (*Cancer pagurus*). Cefas stock status report, Crown Copyright, 2020
- Lobster crab (*Homarus gammarus*). Cefas stock status report, Crown Copyright, 2020

- Crab and Lobster stock assessments 2019 - GOV.UK (www.gov.uk)
- Norway lobster FU6 Farn Deeps. ICES WGNEPS

Please note, spawning maps for brown crab, European lobster, cockle and Nephrops should also be included. These species are deemed to be of high vulnerability, medium sensitivity with medium to high recoverability and of significant regional importance within the North Sea. Mitigation should therefore be considered through consultation with fishing industry and stakeholders.

3. Benthic Ecology

3.1. The impact pathways (source–pressure–receptor interactions) that are proposed to be scoped in and out for benthic ecology are presented in Table 7-6 of the report. The MMO, in consultation with Cefas, agrees with the pathways that have been scoped in, and also agree that some pathways can be scoped out (see paragraph 3.9 below). However, some of the pathways that are proposed to be scoped out should be scoped in, see points below.

3.2. The MMO agrees that all benthic ecology receptors can be scoped out for 'underwater noise changes', 'electromagnetic changes', 'temperature increase', and 'accidental spills' for the reasons provided in the report.

3.3. The following impact pathways are proposed to be scoped out but should be scoped in:

- 'Temporary habitat loss / seabed disturbance' on 'subtidal broadscale habitats' – the extent of physical disturbance to the seabed for a cable of this length is substantial and will affect a broad range of benthic habitats and species. This impact pathway should therefore be assessed in full, with data from the upcoming site-specific survey (and other relevant data sources highlighted) used as the benthic ecology baseline against which impacts are assessed.

- 'Permanent habitat loss / seabed disturbance' on 'subtidal broadscale habitats' – the proposed cable route passes through various sedimentary habitat types that would be permanently altered if cable protection is required, due directly to the material added to the seabed and also any associated scouring. Although such changes would likely be localised, they may cause impacts to regionally rare habitats, biotopes, or species. This impact should therefore be assessed against the complete benthic ecology baseline, once available.

- 'Temporary increase and deposition of suspended sediments' (due to trenching, boulder clearance etc) on 'broadscale habitats' and 'Annex I *Sabellaria spinulosa* reefs' – substantial heavy deposition will occur within the vicinity of the cable route and, therefore, impacts should be assessed against the complete benthic ecology baseline for this area.

- ‘Introduction or spread of marine invasive non-native species (MINNS)’ on ‘subtidal species’ – whilst the MMO, in consultation with Cefas, agrees that the measures proposed will minimise the risk of introducing MINNS, there is a risk that any cable protection that is required will provide hard surfaces that act as steppingstones to facilitate the spread of MINNS in the region. This is a particular concern in areas naturally dominated by soft sediments, as the introduced hard habitat could provide a new niche that increases connectivity with other natural or artificial hard habitats within the dispersal range of species. For the larvae of benthic invertebrate species, dispersal distances of tens of kilometres to more than a hundred kilometres are not unheard of (Álvarez-Noriega et al., 2020). This potential impact pathway should therefore be scoped in and assessed.

3.4. No specific monitoring plans are proposed for benthic ecology receptors, which is to be expected at this stage of the application. The MMO would expect the position on monitoring requirements to be detailed for benthic ecology receptors in the MEAp.

3.5. The proposed data sources to characterise the benthic ecology baseline include site-specific surveys (see Section 7.2.1 of the report) supplemented by publicly available data (see Section 7.2.2 of the report). The MMO, in consultation with Cefas, considers this appropriate.

3.6. The report states that intertidal and subtidal benthic surveys will be carried out (see Section 7.2.1). However, this section doesn’t currently describe any sampling approaches that the MMO, in consultation with Cefas, would expect to be carried out for intertidal surveys. The geophysical, benthic grab and drop-down video techniques described are typically associated with subtidal surveys. It should therefore be confirmed that intertidal benthic surveys will be carried out and the proposed methods should be described.

3.7. The report states that the survey methods will be based on consideration of best practice guidance, and they list several references on which this will be based (see Section 7.2.1 of the Scoping Report). This is appropriate.

3.8. It is unclear what standards will be followed when generating sediment and faunal data from the grab samples. This should be carried out following the recommendations of the Northeast Atlantic Marine Biological Analytical Quality Control (NMBAQC) scheme (Worsfold et al. 2010; Mason 2022).

3.9. The design and methods of the subtidal surveys are described at a broad level, leaving it unclear exactly where benthic sampling stations will be placed in relation to the distribution of habitats within the scoping boundary. It is indicated that the placement of sampling stations will be informed by the geophysical survey outputs (and other data sources) but that a spacing of approximately 5-10 km in offshore sections of the cable corridor, 1 km in nearshore and coastal areas, and 500 m in marine protected areas is expected (Section 7.2.1 of the report). It is not possible

to say whether this will be sufficient at this stage. However, the report states that relevant stakeholders will be consulted prior to the survey commencing.

3.10. In addition to the data sources listed in this section, the Environment Agency (EA) have informed the MMO that they also hold data on intertidal invertebrate assemblages, subtidal epifauna and the size distribution of intertidal sediments, collected to assess the impacts of beach nourishment within the Saltfleet to Gibraltar Point beach management scheme. If you (the applicant) would like to request the data mentioned above, you should email the request to LNenquiries@environment-agency.gov.uk.

4. Coastal Processes

4.1. The options that are scoped in and out in the report with regards to coastal processes are clear and fully supported. The MMO, in consultation with Cefas, highlight there is a third option of partial scoping by reducing the scope of the "scope in" option. In terms of cable burial, the balance between depth of burial (which will be taken forward in the Cable Burial Risk Assessment), Scour protection, and local sediment transport should be assessed.

4.2. The beach landing site is highly dynamic – consideration should be made for the cable integrity at the end of its lifespan in terms of beach profile/cliff erosion due to climate change.

4.3. The use of Mass Flow Excavation (MFE) or sometimes called Controlled Flow Excavation (CFE) is a powerful tool and is considered the most effective "disturber" of the seabed. The MMO therefore recommends that this should only be used as the worst case scenario.

4.4. At this scoping stage, the MMO, in consultation with Cefas, notes that full evidence set /data sources are not required. Please note however that this will be required for the latter stages. Datasources from Cefas's WaveNet (www.cefas.co.uk/wavenet) and OneBenthic (OneBenthic) should also be used.

4.5. Please note, latest information that is available suggests that Outer Dowsing Offshore windfarm (ODOW) are also proposing to bring their export cable ashore between Theadlethorpe and Alderby Creek. Therefore, the cumulative impacts are potentially significant between EGL3, Eastern Green Link 4 (EGL4) and ODOW and therefore should be considered.

4.6. The MMO, in consultation with the EA, has concerns that decommissioning activities has been scoped out, and only the removal of cables has been considered, rather than the casing/tunnels that the cables go through. This is important, as when the coast erodes, then the scour protection/casing/tunnels/lined access pits will potentially be left exposed on a lowered foreshore. Therefore there should be some consideration for the removal of these structural items should this occur.

4.7. Additionally, modifications to the tidal/wave regime has been scoped out. The MMO, in consultation with the EA, appreciates that it may be a short-duration activity, but it may be up to a year, from reading of other proposals, between the installation of cased cable corridors/tunnels from landfall to the actual installation of the cables themselves. The report does not appear to advise if possible impacts or discounted impacts have been modelled without investigation. Neither does there appear to be information in respect of the basis of this assumption. We would suggest that if justification/evidence is not available then these issues should be scoped in.

5. Underwater Noise

5.1. Despite confirming in section 10.5 of the report that underwater noise impacts from vessels and equipment would be assessed, Table 10.7 subsequently scopes out the potential impacts of *'underwater noise changes' (presence of project vessels and equipment including cable trenching)* on marine mammals from further assessment (during the construction, operational and decommissioning phases). The MMO, in consultation with Cefas, partially agrees with the justification provided that sound associated with the construction, removal or operation of submarine cables is less harmful compared to impulsive sound activities such as seismic surveys, military activities or construction work involving pile driving (OSPAR Convention 2012).

5.2. In terms of auditory injury (i.e. Permanent Threshold Shift (PTS) and Temporary Threshold Shift (TTS)), the main concern with non-impulsive or continuous noise sources such as cable laying activities is the potential effects of cumulative sound exposure. The risk of impact depends on the duration of the activity, and on the position of the animal in relation to the source. To determine potential effect ranges, this needs to be modelled using appropriate noise exposure criteria. The MMO, in consultation with Cefas, agrees that exposure over prolonged periods would (most likely) be necessary before there was a risk of injury. Given the transient nature of the installation activities along the cable route, and the mobile nature of cetacean and pinniped species, the risk of auditory injury is likely to be low.

5.3. Some disturbance can be expected from the operations and vessel presence, however this has not been considered. As noted in the OSPAR Agreement 2012-2, there is little information available on potential noise impacts due to the installation (or removal) and operation of sub-sea cables (OSPAR 2008a). Noise associated with the laying of cables adds to the already prevailing acoustical disturbances. Therefore, where appropriate, the timing, duration and method of any cable laying operations should be managed to minimise impacts.

5.4. Whilst recognising that the risk of auditory injury is likely to be low, the MMO does not believe that underwater noise impacts should be fully scoped out at this stage. The MMO, in consultation with Cefas, recommends that underwater noise impacts are further considered within the MEAp, including the potential for disturbance.

5.5. Section 10.5 of Chapter 10 states that the MEAp chapter will be prepared in accordance with the following guidance, which the MMO supports:

- Technical guidance for assessing the effects of anthropogenic sound on marine mammal hearing (NOAA, 2018)
- Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects. (Southall et al., 2019)
- Sound Exposure Guidelines for Fishes and Sea Turtles (Popper et al., 2014)
- Guidance for assessing the significance of noise disturbance against Conservation Objectives of harbour porpoise SACs (England, Wales & Northern Ireland) (JNCC, 2020)

6. Dredge and Disposal

6.1. The MMO notes that the release of contaminated sediments from cable burial has been scoped out. The temporary resuspension of contaminants in sediments has the potential to result in adverse effects on water quality, however, there are no records indicating the presence of contaminated sediments within the Study Area at levels requiring further investigation. However, there is no signposting to what these records are to close this out. If you (the Applicant) can show that the material is likely to be coarse from the PSA then this material is likely to have potential for low risk with regard to release of contaminants. However, where landfall of cables is anticipated there is potential for disturbance of sediments particularly inshore if open trenching (option 2) is undertaken. The MMO, in consultation with Cefas, recommends the scoping in of potential contamination release from the cable laying during construction at this stage (Table 6-6).

6.2. The methodology and chemicals including quantity used for the HDD together with potential risk from punch out of release to the marine environment should be provided in the MEAp for review.

6.3. Appropriate data sources in relation to sediment quality have been used, however the MMO recommends ensuring that the data collected aligns with the MMO's guidelines here: https://www.gov.uk/guidance/marine-licensing-sediment-analysis-and-sample-plans. As this is a voluntary MEAp, and as the works do not fall under the purview of the OSPAR Convention (and noting the various licensing exemptions for cable works), the OSPAR guidelines for sediment sampling do not strictly apply. As such, the MMO recommends ensuring that a representative number of samples is taken from the survey area, and that the locations are evenly distributed.

7. Nature Conservation

7.1 Inshore

Approach to Scoping

7.1.1. The MMO, in consultation with Natural England (NE), notes that due to the timing of the scoping report, the information contained within it is high level and based on a large area of search. The rationale for the inclusion of these large boundaries is due to substantial components of the project remaining undetermined at the point of scoping, but also other aspects including incomplete data collection. This makes it

difficult to provide targeted advice on the scope of the assessments at this stage and creates consenting risks further down the line with identifying and resolving environmental impacts and concerns. Additionally, we highlight that, because we are unable to confirm with a high level of confidence that the data collection proposed will be sufficient to inform the assessments, we are also unable to advise on the potential scale and level of risk this project may pose to nature conservation receptors. Without having this understanding, it is unclear to the MMO, in consultation with NE, how this project will progress towards application and ensure that there is sufficient time in the pre-application phase to identify and address all potential environmental concerns.

7.1.2. Please note, NE's advice has been presented to the MMO in line with their advice to projects where an Environmental Impact Assessment (EIA) would be required to ensure consistency between large infrastructure projects in the marine environment. Therefore, NE recommend that the project incorporates all relevant guidance principals for EIAs within its MEAp as provided in Annex 2 of this response. Case law and guidance has stressed the need for a scientifically robust set of environmental information to be available for consideration prior to a decision being taken on whether or not to grant permission.

Focus of the Non-Statutory Scoping Report

7.1.3. When scoping a project, developers, or their consultants, should satisfy themselves that they have addressed all the potential impacts and the concerns of all organisations and individuals with an interest in the project. Due to the capacious scoping envelope, it is challenging to scope impacts out at this stage and therefore difficult for the MMO and its advisors to comment meaningfully. Further consideration is likely needed in relation to the cable corridor and need for further scoping or ongoing discussions. However, due the timing of 'the scoping', advice is focussed on the known issues of greatest importance/risk considering the likelihood of significant effects on the environment. In these scenarios we also advise that the focus of the MEAp consultation to be on the characterisation survey methodology and approach to the assessment as there is currently insufficient evidence presented to enable us to agree impacts being scoped out.

Wider Marine Environment Impacts vs. Impacts to designated site features.

7.1.4. The MMO, in consultation with NE, is concerned that the sections of the scoping document covering Designated Sites, Marine Processes, Intertidal and Subtidal Ecology and Fish and Shellfish are not suitably aligned. We believe that there are impacts potentially being scoped out without regard to whether the receiving habitat / species is the feature of a designated site and/or supporting habitat for mobile features. Where a feature of a site, such as a broadscale habitat, has a clear Source-Impact Pathway then it should be scoped into full assessment at the MEAp. NE's Advice on Operations for each designated site within the cable route corridor and Zone of Influence (ZoI) give a clear, high-level view of what we consider sensitive to various activities.

7.1.5. Further project specific comments provided by NE on the scoping considerations for EGL3 can be found in Annex 3 of this response. The MMO requests that you (the

Applicant) bully address these comments and consider them in your future MEAp assessments.

Impacts to Subtidal Benthic Designated Sites

7.1.6. The development of the Project is likely to result in cabling through Holderness Offshore Marine Conservation Zone (MCZ) designated site. If impacts are found to cause lasting change, then without prejudice Measures of Equivalent Environmental Benefit (MEEB) is likely to be required. Similarly, if the project design changes and Inner Dowsing Race Bank and North Ridge Special Area of Conservation (SAC) can't be avoided then without prejudice compensation is likely to be required. Please see Annex 2 of this response for more information provided on this by NE.

Proposed Project Landfall Locations

7.1.7. The scoping boundary for the landfall location covers the area between Theddlethorpe and Anderby Creek. At its northern limit, the scoping boundary would result in landfall across Saltfleetby to Theddlethorpe Dunes & Gibraltar Point SAC/ Saltfleetby – Theddlethorpe Dunes Site of Special Scientific Interest (SSSI). These sites overlap with the intertidal areas and should therefore be scoped into the marine licence application. The MMO also advises that project design decisions made within the marine environment will impact on where the landfall occurs. The MMO, in consultation with NE, advises that every effort should be made to avoid this site as part of embedded mitigation measures to ensure no adverse effect to the features of this site.

7.1.8. Further to this, the MMO highlights the number of development projects that are currently seeking to make landfall within this section of the Lincolnshire coastline north of Wolla Bank SSSI between Anderby Creek and Theddlethorpe. There is a need to consider each of these projects collectively to ensure that each has sufficient space without collectively conflating any nature conservation concerns. The MMO, in consultation with NE, would therefore welcome a coordinated holistic network design approach at this location.

Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards

7.1.9. NE has been leading the 'Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards' project, funded by Defra's Offshore Wind Enabling Actions Programme (OWEAP).

The project is providing up-front best practice advice on the way data and evidence is used to support offshore wind farm development and consenting in English waters, focussing on the key ecological receptors which pose a consenting risk for projects, namely seabirds, marine mammals, seafloor habitats and species and fish. The project aims to facilitate the sustainable development of low impact offshore wind by increasing clarity for industry, regulators and other stakeholders over data and evidence requirements at each stage of offshore wind development, from pre-application through to post-consent.

However, the MMO, in consultation with NE, advises that this best practice guidance is also applicable to other marine major casework. The advice documents are currently stored on a SharePoint Online site, access to needs to be requested

from:neoffshorewindstrategicsolutions@naturalengland.org.uk. Please allow up to three working days for requests to access the site to be granted. The MMO notes that NE is currently reviewing ways of making the advice more accessible and open access.

The application should be fully informed by the recommendations in the Best Practice Advice, and please note that NE will increasingly be appraising applications with respect to the extent to which the guidance has been followed.

7.1.10. In addition, the MMO recommends reviewing NE's Cabling Lessons Learnt guidance which can be found at the below website: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010080/EN010080-001240-Natural%20England%20-%20Offshore%20Cabling%20paper%20July%202018.pdf

7.2. Offshore

Headline statements

7.2.1. The EGL3 project has provided a scoping boundary which includes interaction with the Southern North Sea SAC (SNS SAC), the Holderness Offshore MCZ and the Greater Wash Special Protection Area (SPA). All of these sites have features sensitive to many aspects of cable laying operations. The MMO, in consultation with the Joint Nature Conservation Committee (JNCC) therefore highlight the importance of clear and adequate assessments following impact-pathway methodologies between the likely planned operations and features. We recommend using the Site Information Centres (SICs) for these sites, paying particular attention to Conservation Objectives (COs), Attributes and Sub-attributes.

- Southern North Sea SAC: https://jncc.gov.uk/our-work/southern-north-sea-mpa/
- Holderness Offshore MCZ: https://jncc.gov.uk/our-work/holderness-offshore-mpa/
- Greater Wash SPA: Greater Wash SPA Natural England

Due to ongoing permanent impacts from human activities within these sites the mitigation hierarchy should be followed in the subsequent MEAp assessment including the potential for compensatory measures to be required as part of this licensing programme.

7.2.2. The development of the Project is likely to result in cable laying operations through Holderness Offshore MCZ designated site. The MMO, in consultation with JNCC, strongly recommends that the scoping boundary that avoids the MPA and traverses to the East is taken forward to reduce the impacts associated with the project. If impacts are found to cause lasting change, then without prejudice compensation or MEEB is likely to be required.

7.2.3. Similarly to the above point 7.1.4 of this response, the MMO, in consultation with JNCC, is concerned that the chapters covering Designated Sites, Marine Processes, Intertidal and Subtidal Ecology and Fish and Shellfish are not suitably aligned. There are impacts being scoped out without regard to whether the receiving habitat / species is the feature of a designated site. Where a feature of a site, such as a broadscale habitat, has a clear Source-Impact Pathway then it

should be scoped into full assessment at the MEAp. JNCC's Advice on Operations for each designated site within the cable route corridor and ZoI give a clear, high-level view of what is considered sensitive to an array of activities.

General comments

7.2.4. Throughout the report there appears to be some confusion about the North East of Farnes Deep MCZ and the North East of Farnes Deep HPMA. These overlapping MPAs retain different features and different conservation advice which appears to have been mixed up within some sections of the report. Critically, whilst the MCZ retains broadscale habitat features and a species feature, the HPMA is designated for the protection of the entire marine ecosystem of the area. These should be reviewed and assessed separately, where assessment is appropriate. The MMO highlights the JNCC SIC for the sites: https://jncc.gov.uk/our-work/north-east-of-farnes deep-mpa-and-hpma/ which should be used to provide clarity and guidance.

Introduction (Chapter 1)

7.2.5. The scoping boundary is described as being 1km wide with a view to reducing the application boundary to 500m. Where environmental sensitivities become evident during the survey programmes the MMO, in consultation with JNCC, recommends consideration is given to retaining a 1km width to allow more options with micro-routing.

Project Needs and Alternatives (Chapter 2)

7.2.6. There is a discrepancy between the final paragraph of 2.5.4 and the maps provided throughout the rest of the chapters. This paragraph states that the easternmost route option *"avoids the Holderness Offshore MCZ, but crosses the northern tip of the Silver Pit glacial tunnel valley feature outside of the site".* Based on the map on page 55, it appears that the scoping boundary for this route option does pass through a section of the Holderness Offshore MCZ.

Project description (Chapter 3)

7.2.7. Table 3-1 details pre-construction activities that may be needed for the project. The MMO, in consultation with JNCC, notes the inclusion of boulder clearance methodologies including boulder ploughs. We recommend that where boulder ploughs are included in the marine licence application, a considerable level of detail is provided which supports why this tooling is the best available option and the likely impact this activity will have on the benthic environment, this is especially critical in MPAs.

7.2.8. The MMO notes the approach of seeking to avoid potential Unexploded Ordnances (UXOs) by micro-routeing through the site and approve of this approach. We also approve of prioritising removal of any UXOs over in-situ detonation. We would however, advise that if in-situ detonation is required, low order deflagration should be prioritised in line with the Governments position statement on UXO clearance.

7.2.9. Should UXO clearance be required, a detailed environmental impact assessment and mitigation plan would be needed to support any licence application. Please note, UXO clearance is should be applied for under a separate licence.

7.2.10. It should be noted that an update to the Governments UXO position statement is expected in the next couple of months and the MMO recommends monitoring Defra's web page for updates.

7.2.11. Table 3-3 of the report provides sufficient details on potential cable lay and burial techniques, highlighting the project decisions will be made subsequent to the geophysical survey programme and as part of the Cable Burial Risk Assessment (CBRA) process. The MMO, in consultation with JNCC, recommends that the potential for repeat passes of trenching and burying equipment be carefully reviewed as part of the marine application process and suggests that if this is included as potential mitigation it is clearly detailed how and where this may be possible using information from the geophysical programme and CBRA. All rock placement will have to be clearly justified against the CBRA, risks to the cable and predicted burial success. The MMO notes the inclusion of "Imported sand placement" as a potential protective measure,and would appreciate more information / discussions with JNCC on the feasibility of this possibility.

7.2.12. Regarding decommissioning, recent and ongoing decommissioning requirements of Offshore Wind Farm projects, including cables and cable protection, should be reviewed.

Section 3.5.3. Construction Vessels

7.2.13. The MMO advises that the number and duration of vessels to be used throughout the works are clearly presented. This includes any surveys pre- and post- construction. The time vessels will spend inside the Greater Wash SPA and a 2.5km buffer around the SPA should also be clearly presented.

Marine Environmental Assessment Approach and Methodology (Chapter 4)

7.2.14. Within an MPA the conservation objectives do not allow for distinguishing between the value of a feature. The MMO, in consultation with JNCC, considers the features of MCZs to have equal value as features of SACs and SPAs, therefore scoring them lower in Table 4-3 is inappropriate. Including the value of a receptor into the "Sensitivity of Impact" would not be appropriate in determining significance of effect of an activity. Furthermore, if a feature of a designated site is in poor condition, meaning it requires effort to recover, it is likely to be even more sensitive to impacts. This is reflected in the conservation objective which, if impacted, would more likely be affected and the MPA taken away from achieving favourable conservation status which would translate to a higher level of impact significance. Value of a receptor is more usually applied to visual and landscape assessments and may not be appropriate for marine subtidal habitats.

Designated Sites (Chapter 5)

7.2.15. As previously mentioned, the MMO recommends care when distinguishing the North East of Farnes Deep MCZ and HPMAs. They occupy the same physical area however they have different features and management approaches. High level conservation advice can be found here: https://hub.jncc.gov.uk/assets/d12633b1-b123-4738-a594-b53c183aee68

For clarity the North East of Farnes Deep MCZ has the subtidal habitat features; 'Subtidal coarse sediments'; 'Subtidal mixed sediments'; 'Subtidal mud'; and

'Subtidal sand' and a species feature 'Ocean quahog (Arctica islandica)', all of which have their own conservation objectives, attributes and sub-attributes. The North East of Farnes Deep HPMA has a single conservation objective which applies to the whole site: 'To achieve full natural ecosystem recovery of the structure and functions, features, qualities and composition of characteristic biological communities present within HPMAs and prevent further degradation and damage to the marine ecosystem subject to natural change'.

Intertidal and Subtidal Benthic Ecology (Chapter 7)

7.2.16. The MMO, in consultation with JNCC, disagrees with some of the scoping assessments presented. There are some impacts that could be scoped out when occurring outside of designated sites however as this has not been clearly defined and following on from our earlier comment, we suggest the following areas are scoped in.

7.2.17. Temporary habitat loss / seabed disturbance from; boulder clearance, pre-lay grapnel run (PLGR), pre-sweeping of sand waves; cable burial and trenching; anchoring/jack-up foundations; and deposit of external cable protection with regards subtidal broadscale habitats has been scoped out. The MMO considers these activities to have a physical impact to subtidal broadscale habitats that requires assessment, most particularly in MPAs designated for such habitats (Holderness Offshore MCZ) or where features rely on such habitats (Ocean Quahog in Holderness Offshore MCZ and Conservation Objective 3 of SNS SAC). The MMO does not consider there to be sufficient evidence to support the assumption that boulder clearance ploughs or pre-sweeping activities have a temporary impact on such features and therefore recommend these activities are scoped into the MEAp.

7.2.18. Permanent habitat loss from deposition of external cable protection with regards to subtidal broadscale habitats has been scoped out. Any external cable protection will require licensing and therefore an assessment of the impact of such protection on the local environment is required and therefore this impact should be scoped in. Whereafter pre-survey programmes, CBRA production and review, if the applicants find there is risk of external protection within MPAs then considerable assessment must be made to support justification for this impact.

7.2.19. Temporary increase and deposition of suspended sediments from; boulder clearance, PLGR, pre-sweeping of sand waves; cable burial and trenching; anchoring/jack-up foundations; and deposit of external cable protection with regards broadscale habitats and Annex I *Sabellaria spinulosa* reefs has been scoped out. Noting the EGL3 environmental survey programme has not yet been undertaken and therefore the possibility of habitats being present within the survey corridor outside of those listed exists, the MMO recommends these potential impacts continue to be scoped in. In particular, the habitats already listed, including Annex I *Sabellaria spinulosa* reef, have a medium sensitivity to heavy smothering which the applicant has identified as a likely impact within a 100m corridor of operations. It is therefore reasonable to scope in this impact. Following project-specific survey data, a refined approach may be taken within the MEAp which links to the scoping report and confirms habitat presence across the project.

7.2.20. Electromagnetic changes / barrier to species movement from presence of cables with regards to subtidal species has been scoped out in Section 7, Subtidal and Benthic Ecology. The MMO, in consultation with JNCC, considers the justification for this to be relevant and adequate however in reviewing Chapter 8 Fish and Shellfish we noted this impact has been scoped in. The MMO considers this to be a clash of scoping requirements and therefore recommends a precautionary approach is taken where this impact is scoped in for both. This should be especially relevant considering the Ocean quahog feature of Holderness Offshore MCZ.

Intertidal and Offshore Ornithology (Chapter 9)

7.2.21. The MMO, in consultation with JNCC, agrees with the proposed potential impacts scoped into the assessment on intertidal and offshore ornithology. We advise that works occurring within or around the Greater Wash SPA are carried out outside of the wintering period for common scoter and red-throated diver. Common scoters and red-throated divers are present in the Greater Wash SPA between September and April (inclusive), see seasonality tables here:https://designatedsites.naturalengland.org.uk/Marine/Seasonality.aspx?SiteCode=UK9020329&SiteName=greater%20wash&SiteNameDisplay=Greater+Wash+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality

Should this not be possible, or the timing of works unknown at this stage, then we advise that a vessel disturbance assessment is carried out as described below.

7.2.22. The conservation objectives of the Greater Wash SPA should be noted, and impacts should be assessed relative to the conservation objectives. The conservation objective for the red-throated diver feature of the Greater Wash SPA is to “Reduce the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed”. The conservation objective for the common scoter feature of the Greater Wash SPA is to “Restrict the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed”. Disturbance to red-throated diver and common scoter needs to be managed and limited as far as possible to avoid impacting this species. See conservation objectives here:

https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9020329&SiteName=greater%20wash&SiteNameDisplay=Greater+Wash+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=6

7.2.23. There is evidence of a behavioural response of seabirds to the presence of vessels, including taking flight and escape diving (Jarrett et al., 2022). Certain species appear to be more sensitive to vessel presence, showing avoidance behaviours at greater distances from vessels and moving further away from vessels (Kaiser et al., 2006; Fliessbach et al., 2019; Mendel et al., 2019). Red-throated divers and common scoter in particular have been observed to be displaced from vessels (Larsen & Laubek, 2005; Kaiser et al., 2006; Schwemmer et al., 2011;

Burger et al., 2019; Fliessbach et al., 2019; Mendel et al., 2019; Burt et al., 2022; Jarrett et al., 2022).

7.2.24. In terms of carrying out a vessel disturbance assessment, the MMO, in consultation with JNCC, recommends that the following steps are taken. In light of evidence of vessel displacement, we advise that a 2km buffer around vessels is used for the assessment of 100% displacement of red-throated diver (Burt et al., 2022, Burger et al., 2019). In light of evidence of vessel displacement, we advise that a 2.5km buffer around vessels is used for the assessment of 100% displacement of common scoter (Fliessbach et al., 2019). We advise that the area of impact should be calculated and put into context of the SPA area by calculating the proportion of the SPA area impacted. We also advise that the number of birds impacted are calculated. Crucially, this should be done by using distribution maps of the relevant features in the relevant SPA. The distribution maps per species should be overlain with the area of impact per species to calculate the number of birds potentially impacted. This can then be put into context of the SPA population by calculating the proportion of the SPA population impacted.

7.2.25. An estimate of the number of vessel-days occurring within the SPA between September and April should also be provided, and ideally on a monthly basis if that information is available. Should these vessels be in different locations around the SPA, this also should be accounted for in the calculation of area and number of birds potentially affected.

7.2.26. For an assessment of the Greater Wash SPA, we advise that the distribution maps within Lawson et al. (2015) are used. The data contained within Lawson et al. (2015) consists of individual distribution maps per species from a combination of data from multiple surveys. Therefore, a vessel disturbance assessment should be made using data from the individual species distribution maps and a number of birds potentially displacement presented. Density distribution shapefiles for use in an assessment can be requested from JNCC.

Marine Mammals and Marine Reptiles (Chapter 10)

7.2.27. Table 10-1: The MMO, in consultation with JNCC, is agrees with the approach of using Management Units (MUs) to assess the population impacts on cetacean species and highlight that an update to the densities for the MUs was published in 2021 (https://hub.jncc.gov.uk/assets/3a401204-aa46-43c8-85b8-5ae42cdd7ff3).

7.2.28. Table 10-7: The MMO notes that neither temporary nor permanent seabed loss has been considered within the scoping assessment. Considering that the cable route passes through the Southern North Sea SAC, for which Conservation Objective 3 states that, “The condition of supporting habitats and processes, and the availability of prey is maintained,” it is suggested that consideration of the potential loss of seabed is essential to ensure that the supporting habitats are maintained in the region. Whilst ‘Changes in prey availability’ has been scoped in, it is recommended that seabed loss is also scoped in. It is noted in Chapter 8 that temporary and permanent habitat loss of shellfish and marine species with a demersal life stage were both scoped in and therefore we recommend that this work should link with discussions of CO3 of the SNS SAC where appropriate.

7.2.29. Table 10-7: It is acknowledged that underwater noise changes have been scoped out of the assessment. The MMO, in consultation with JNCC, are content with this approach as long as the potential impacts of pre-construction surveys are assessed during Screening for Appropriate Assessment (for the relevant SACs) and European Protected Species Assessments.

Scoping Conclusions (Chapter 15)

7.2.30. There doesn't currently appear to be any methodology for scoping cumulative effects. For a cumulative assessment of visual/physical disturbance or displacement to red-throated diver and common scoter features of the Greater Wash SPA, the MMO, in consultation with JNCC, advises that all other activities which may cause a disturbance or displacement effect are included. This includes operational offshore wind farms and all vessel activity including, for example, shipping, aggregates, cable and pipeline construction and maintenance, and vessels associated with offshore wind farms. Some of these existing activities may form part of the baseline, however the combination of these activities should still be assessed, particularly with regard to the proportion of the SPA area effected. In addition, the cable route passes through both the summer and winter areas of the Southern North Sea SAC, for which there are both daily and seasonal noise thresholds, an in-combination assessment will be essential during the Appropriate Assessment stage. JNCC's Guidance on noise management in harbour porpoise SACs (2020) should be used to inform the assessment for the Southern North Sea SAC.

7.2.31. It is noted that NGET and Scottish and Southern Electricity Networks Transmission (SSEN Transmission) requested input regarding a combined approach of the MEAp across national borders. However, it is the MMO's opinion, in consultation with JNCC, that the submissions should be country specific. This would remove superfluous content and streamline review processes. Some impacts may cross the national boundary which would have to be covered in submissions to both the MMO and MD-LOT.

8. Water Quality

8.1. The report highlights a constraint of crossing Hornsea 1 and 2 offshore wind farm export cables (Chapter 2, paragraph 2.5.3.2). However, please note there may be further constraints from the ODOW, an application for which has been submitted. ODOW also proposes landfall of its offshore wind farm export cables just south of Anderby Creek. It is noted that this is included in the scoping report (Chapter 13) together with an acknowledgement of the presence of the Triton Knoll Electrical System, which also landfalls at Anderby Creek.

8.2. When crossing flood defences (including the beach) or main rivers, only trenchless techniques can be utilised. Any crossing of the defences (including the beach) will need to be sufficiently deep and account for any future works that may need to be undertaken. Access to the beach and sea defences should not be restricted.

8.3. The report refers to the avoidance of seabanks. Please note, there are offshore sea banks/sandbars that are of benefit to the beach/sea defences, and these should not be disturbed or removed. Offshore areas need to be carefully selected based on those that contribute to wave breaking/dune sheltering/depth limiting benefits.

8.4. In relation to the landfall location at Anderby, there is an outfall that extends past Mean High Water Springs (MHWS) and towards the sea. Please note that should Anderby Creek be the chosen landfall location, care must be taken to avoid impacting the structure.

8.5. The landfall area is close to where the Environment Agency (EA) buries the sinker line, which is used annually in connection with the Saltfleet to Gibraltar Point beach management (nourishment) scheme for the east coast (typically just south of Anderby around Moggs Eye, but changes can occur to burial location). It is also close to the EA access point for heavy plant and machinery onto the beach. The EA's depot is at Anderby Creek and any disturbance should therefore be avoided here.

8.6. Through lessons learned with other cable landfalls, the MMO have been informed that the EA's land-based works and marine elements cannot co-exist with other cable construction. Therefore, the EA are intending to look to secure a period of time each year to undertake beach and marine area works and if there are delays, total cost recovery from the developer will be sought. In line with other similar schemes, a legal agreement will need to be completed with the EA in respect of this. Marine works include connecting to a dredger offshore with a sinker line that the EA land on the beach to pump the dredgings ashore. The MMO recommend contacting the EA directly to discuss these requirements if necessary.

8.7. The MMO welcomes the inclusion of designated bathing waters as a potential receptor and consideration of this will be included in the assessment. The MMO, in consultation with the EA, would seek to prevent any project works being undertaken within 500 metres of the intertidal area (or within the intertidal area itself) during the Bathing Water season (between 15 May and 30 September) in any year unless a scheme to protect the current Bathing Water status has demonstrated that the works will not release potential bacteriological concentrations that may be caused by disturbed sediment.

8.8. For information, the EA have informed the MMO that during the Horizontal Directional Drilling (HDD) operations for the Triton Knoll landfall, sinkholes formed on the beach near Anderby Creek. The EA are aware of instances of existing caverns within the chalk, covered with a thin veneer of sediments, which due to fluctuations in water levels, can collapse into the existing caverns/solution hollows. Some examples include the Dolines of Bronkham Hill, Dorset. Drilling operations for Triton Knoll possibly disturbed the overlying sediments and/or hydrology, leading to the formation of this type of sinkhole. The underlying bedrock of the area, like that of Bronkham Hill, is chalk. So, there may also be a need for a geotechnical investigation along the cable route.

The EA has also informed the MMO that they are aware of previous incidents of 'blow out' of bentonite slurry for similar projects when coming ashore; in one case the sands did not provide a stable enough seal to prevent break-out and resulted in drilling mud having to be incorporated on the beach to dry naturally. East Lindsey District Council raised safety concerns because the safety data sheet indicated a chronic carcinogen risk from breathing in dust, and after drying there would be a risk of wind-blown dust generation. Therefore, the EA recommend that it may be prudent to discuss this issue with the Council.

9. Commercial fisheries

9.1. The commercial fisheries chapter presents fisheries restrictions that overlap with the project on the inshore/landfall section. There are current and future restrictions that will restrict fishing activity in the offshore regions of the project as well that will have caused displacement of effort causing extensive spatial squeeze in the area. Commercial fisheries on the east coast are facing extensive spatial squeeze, and therefore every effort should be taken to characterise the baseline environment to include data that is not publicly available and can be attained directly from commercial fishing business in the region or gear scout/effort surveys.

9.2. The MMO recommends that the appointment of a knowledgeable Fisheries Liaison Officer (FLO) with local expertise is essential to ensure minimum disruption to commercial fishing activities.

10. Navigation

10.1. The project scoping area includes a significant amount of other marine users, for example offshore windfarms, oil and gas installations, dredging sites, ports, and crossing interconnector cables. The area also carries a significant amount of through traffic to major ports, with a number of important international shipping routes in close proximity. Therefore, attention needs be paid to changes in vessel routing, particularly in heavy weather ensuring shipping can continue to make safe passage without large-scale deviations, and any reduction in navigable depth referenced to chart datum.

10.2. The MMO notes the commitment in Chapter 11 to complete a Navigation Risk Assessment (NRA) with supporting marine traffic surveys to establish how the phases of the project are managed to a point where risk is reduced and considered to be 'as low as reasonably practicable' (ALARP), which is welcomed. A marine hazard identification workshop would also be welcomed by the Maritime Coastguard Agency (MCA), as part of the NRA, including local ports and harbours.

10.3. A range of potential project impacts on shipping and navigation have been identified which could occur during the construction, operation, and decommissioning phases of the project, and the assessment will follow the IMO Formal Safety Assessment methodology. The MMO, in consultation with MCA, would expect the MEAp report to detail the possible impact on navigational issues for both commercial, fishing and recreational craft, specifically:

- Collision Risk
- Navigational Safety
- Risk Management and Emergency response
- Marking and lighting of site and information to mariners
- Effect on small craft navigational and communication equipment
- The risk to drifting recreational craft in adverse weather or tidal conditions
- The likely squeeze of small craft into the routes of larger commercial vessel.

10.4. The MMO, in consultation with MCA, notes the potential for a reduction of under keel clearance (UKC), which will be scoped into the assessment. Safe realistic UKC assessment should be undertaken for the maximum drafts of vessel both observed and anticipated. Please note, the MMO's Under Keel Clearance Policy paper can be found at the following link: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/373456/Under_Keel_Clearance_paper_May_14_-_FINAL.pdf

10.5. Attention should be paid to cabling routes and burial depth for which a Burial Protection Index study should be completed. Please also note, subject to the traffic volumes, an anchor penetration study may be necessary. The MMO notes the intention to complete a CBRA, the results of which will determine the final target burial depth and will be used to inform the MEAp.

10.6. If cable protection measures are required e.g., rock bags or concrete mattresses, the MMO, in consultation with MCA, would be willing to consider a 5% reduction in surrounding depths referenced to Chart Datum. However, this is subject to further consultation at the Marine Licence Application stage. This will be particularly relevant where depths are decreasing towards shore, and at cable crossings, and potential impacts on navigable water increase. Where this is not achievable, the requirement for this must be discussed further. The MMO notes in the report that as the design progresses, further assessments will be undertaken to assess the subsea cables protection against shipping and fishing activities. Rock protection could potentially be utilised to cover the cable pending assessment from marine traffic and the NRA.

10.7. A study should be undertaken to establish the electromagnetic deviation, affecting ship compasses and other navigating systems, of the high voltage cable route to the satisfaction of the MMO, in consultation with the MCA. On receipt of the study, the MMO reserves the right to request a deviation survey of the cable route post installation. We note this has been scoped in for the operational phase of the project, which is welcomed.

11. Archaeology

11.1. An archaeological desk-based assessment should be commissioned from an appropriate and experienced marine archaeological contractor working to recognised professional standards, such as those defined by the Chartered Institute for Archaeologists. This is essential to qualify any material or features of historic

environment interest revealed by geophysical or geotechnical surveys and create a comprehensive baseline for these areas.

11.2. The MEAp should therefore set out further guidance documents it will follow on the assets of survey data, such as the Historic England Deposit Modelling and Archaeology Guidance for Mapping Buried Deposits. There should also be clearer indications within guidance sections which apply to English waters, and which to Scottish waters.

11.3. Furthermore, with regards to the collection of geoarchaeological data, it is important there is a method statement for retention, storage and stage 1 and 2 assessments in place, which contains clear objectives in line with relevant research frameworks. Additionally, the MMO, in consultation with Historic England (HE), notes that Section 14.2 of the report 'Data sources' references the UK Hydrographic Office (UKHO), National Record of the Historic Environment (NRHE) and local Historic Environment Record (HER) for publicly available data. However, the description of data within the NRHE only covers the designated heritage assets, which are contained within the National Heritage List for England (NHLE). This should also include the description for the undesignated heritage assets held within the NHRE. Furthermore, consideration of the NRHE undesignated heritage asset data should be included within any baseline characterisation within the MEAp.

11.4. The proposed assessment methodology, as presented in Section 14.5, should also consider further guidance relevant to determining the value of maritime, aviation and seabed prehistory. This would be beneficial to the assessment of sensitivity.

11.5. The MMO, in consultation with HE, notes from Section 14.5.2 of the report 'Mitigation' that known receptors will be avoided through the application of Archaeological Exclusion Zones (AEZs), Temporary Archaeological Exclusion Zones (TAEZs) and subsequent micro-siting of infrastructure on the seabed, as necessary. Also, we understand that unavoidable impacts to potential receptors will be addressed through agreed mitigation measures, and that these measures will be set out in a project-specific Written Scheme of Investigation (WSI). Based on the information presented, these seem sensible and should be further developed as the desk-based assessment and site specific geophysical and geoarchaeological assessments are completed. Further, the MMO, in consultation with HE, request the need for any archaeological reports produced as a part of this development to be recorded via OASIS V (Online AccesS to the Index of archaeological InvestigationS).

Conclusion

This response is provided incorporating the best available evidence to us at this time, and without prejudice and is therefore not a pre-determination of any advice that may be given at any other point of the pre-application or future marine licence application process. As we have provided a formal response to this enquiry, the MMO considers the purpose of the enquiry to have been completed and is content to close it down. Please notify us within 14 days of the date of this letter if you wish for the enquiry to remain open.

Your feedback

We are committed to providing excellent customer service and continually improving our standards and we would be delighted to know what you thought of the service you have received from us. Please help us by taking a few minutes to complete the following short survey (https://www.surveymonkey.com/r/MMOMLcustomer).

If you require any further information please do not hesitate to contact me using the details provided below.

Yours Sincerely,

[redacted]

Harriet Tyley
Marine Licensing Case Officer

D [redacted]
E [redacted]

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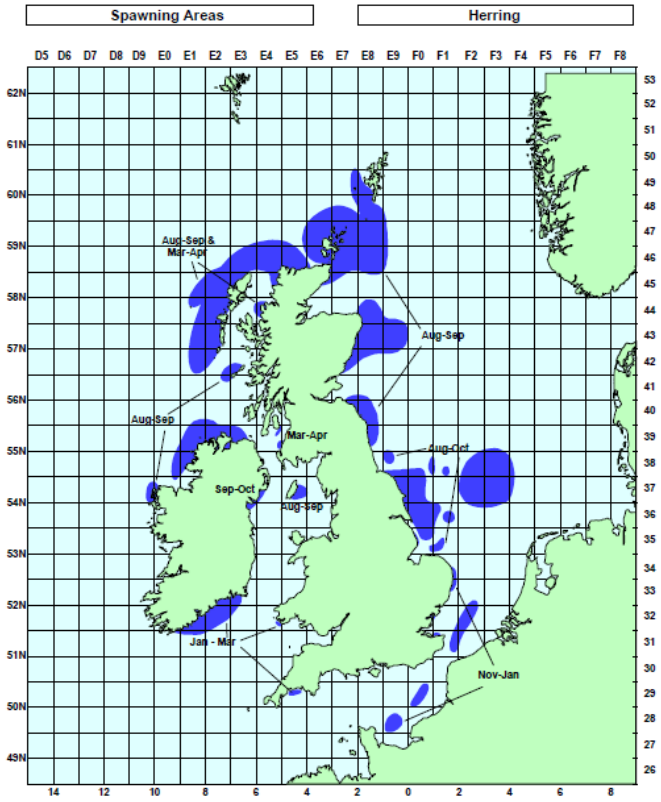
Annex 1 – Map of Historic Herring Spawning Grounds



Annex 2 – Natural England Advice related to Scoping Requirements

1. General Principles

Schedule 4 of the Town & Country Planning (Environmental Impact Assessment) Regulations 2017 / Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (Regulation 10) sets out the necessary information to assess impacts on the natural environment to be included in an Environmental Statement (ES), specifically:

- A description of the development – including physical characteristics and the full marine use requirements of the site during construction and operational phases.
- Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.
- An assessment of alternatives and clear reasoning as to why the preferred option has been chosen.
- A description of the aspects of the environment likely to be significantly affected by the development, including population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape/seascape, and the interrelationship between the above factors.
- A description of the likely significant effects of the development on the environment – this should cover direct effects but also any indirect, secondary, cumulative, short, medium, and long term, permanent and temporary, positive, and negative effects.
- Effects should relate to the existence of the development, the use of natural resources and the emissions from pollutants. This should also include a description of the forecasting methods to predict the likely effects on the environment.
- A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.
- A non-technical summary of the information.
- An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.

It will be important for any assessment to consider the potential cumulative effects of this proposal, including all supporting infrastructure, with other similar proposals and a thorough assessment of the 'in combination' effects of the proposed development with any existing developments and current applications. A full consideration of the implications of the whole scheme should be included in the ES. All supporting infrastructure and activities should be included within the assessment.

Natural England's advice on the scope and content of the Environmental Statement is given in accordance with the National Infrastructure Planning Advice Notes: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/

2. Biodiversity and Geology

2.1. Ecological Aspects of an Environmental Statement

Natural England advises that the potential impact of the proposal upon features of nature conservation interest and opportunities for habitat creation/enhancement should be included within this assessment in accordance with appropriate guidance on such matters. Guidelines for Ecological Impact Assessment (EcIA) have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM) and are available on their website.

EcIA is the process of identifying, quantifying, and evaluating the potential impacts of defined actions on ecosystems or their components. EcIA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal.

The National Planning Policy Framework (NPPF) sets out guidance on how to take account of biodiversity interests in planning decisions and the framework that the responsible authority should provide to assist developers. Further guidance is set out in Planning Practice Guidance on the natural environment.

2.2. Use of EIA Matrices

Natural England notes that the approach to the assessment is proposed to align with EIA approaches used on other projects. This matrix approach has been used throughout ESs to date to support the assessment of the magnitude and significance of impacts. Natural England notes numerous instances where significance has been presented as a range (i.e., slight, or moderate, or large) and it is nearly always the lower value that has been taken forward. Indeed, to date no offshore windfarm has identified ecological impacts that are assessed as significant in EIA terms, either cumulatively or in-combination which is surprising. In the absence of evidence to support the use of the lower value in a range, Natural England's view is that the higher value should always be assessed in order to ensure that impacts on features are not incorrectly screened out of further assessment. This is in line with the principles of the Rochdale envelope approach.

2.3. Impact Risk Zones

Natural England advises that scoping area should be based on the potential for species to be present within the area, the Impact Risk Zone (IRZ) for designated sites as available on Magic, the ecology, i.e., foraging areas of designated species of sites in proximity to the proposed development area.

2.4. Designated Sites – Special Protection Areas (SPAs) and Special Areas of Conservations (SACs)

The application documents should thoroughly assess the potential for the proposal to affect designated sites. Internationally designated sites (e.g., designated Special Areas of Conservation (SAC) and Special Protection Areas (SPA)) fall within the scope of the Conservation of Habitats and Species Regulations 2017 (as amended). In addition, paragraph 181 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential, or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites. (NB. sites falling within the scope of regulation 8 of the Conservation of Habitats and Species Regulations 2017).

Under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) and Regulation 28 of the Conservation of Offshore Habitats and Species

Regulations 2017 (as amended) an appropriate assessment needs to be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site.

Further information on the special interest features, their conservation objectives, and any relevant conservation advice packages for designated sites is available on Natural England's website https://designatedsites.naturalengland.org.uk/ ; and the JNCC website.

The cable corridor area of search overlaps with the following designated nature conservation sites within 12 nautical miles:

- Greater Wash SPA
- Humber Estuary SPA and RAMSAR
- Saltfleetby to Theddlethorpe Dunes & Gibraltar Point SAC
- The Wash and North Norfolk Coast SAC – supporting habitat for the designated feature Harbour (common) seal (*Phoca vitulina*) only.

Please note: As there is only an area of search for the cable corridor at this stage, we are unable to provide a definitive list of sites and features relevant to the project, but these should be identified and fully considered within the application documents. We note that the EGL 3 environmental survey programme has not yet been undertaken and therefore the possibility of habitats being present within the survey corridor outside of those listed exists.

The application documents should include a full assessment of the direct and indirect effects of the development on the features of special interest within these sites and should identify such mitigation measures as may be required to avoid, minimise, or reduce any adverse significant effects.

Internationally designated site conservation objectives are available on Natural England's internet site: http://publications.naturalengland.org.uk/category/6490068894089216

2.5. Habitats Regulations Assessment

If the proposal outlined within the scoping document has the potential to significantly affect features of the designated sites and the activity is not directly connected to the management of any designated site it should be assessed under regulation 63 the Conservation of Species and Habitats Regulations (2017)/ regulation 28 of the Conservation of Offshore Species and Habitats regulations (2017). Should a Likely Significant Effect on an Internationally designated site be identified or be uncertain, the competent authority (e.g., the Marine Management Organisation or Local Planning Authority or Government Department) may need to prepare an Appropriate Assessment, in addition to consideration of impacts through the Application process.

If during the EIA/Application process the potential for a Likely Significant Effect on the conservation objectives of the sites cannot be ruled out the competent authority for the licence/consent (MMO / Government Department/LPA) should undertake an Appropriate Assessment of the implications for the site in view of its conservation objectives. Noting recent case law (People Over Wind3) measures intended to avoid and/or reduce the likely harmful effects on an internationally designated sites cannot be taken into account when determining whether or not a plan or project is likely to have a significant effect on a site,

therefore consideration is required at Appropriate Assessment. Natural England wishes to be consulted on the scope of the Habitats Regulations Assessment and the information that will be produced to support it and should be formally consulted on any Appropriate Assessment provided for the proposal (Regulation 63/28).

The consideration of Likely Significant Effects should include any functionally linked habitat outside the designated site. These areas may provide important habitat for mobile species populations that are qualifying features of the site, for example birds and bats. This can also include areas which have a critical function to a habitat feature within a designated site, for example by being linked hydrologically or geomorphologically. Further guidance is set out in Planning Practice Guidance on appropriate assessment here: https://www.gov.uk/guidance/appropriate-assessment

Further information on the special interest features, their conservation objectives, and any relevant conservation advice packages for designated sites is available on Natural England's website https://designatedsites.naturalengland.org.uk/; and the Joint Nature Conservation Committee (JNCC) website About Marine Protected Areas | JNCC - Adviser to Government on Nature Conservation.

2.6. Marine Conservation Zones (MCZs)

Highly Protected Marine Areas (HPMAs) and Sites of Special Scientific Interest (SSSI) Marine Conservation Zones (MCZs) Marine Conservation Zones are areas that protect a range of nationally important, rare, or threatened habitats and species. You can see where MCZs are located and their special interest features on www.magic.gov.uk . Factsheets that establish the purpose of designation and conservation objectives for each of the MCZ's are available at https://www.gov.uk/government/collections/marine-conservation-zone-designations-in england

The red line boundary of the Project is within or adjacent to the following MCZ within 12 nautical miles:

- Holderness Offshore MCZ

The application should consider including information on the impacts of this development on MCZ interest features, to inform the assessment of impacts on habitats and species of principle importance for this location. Further information on MCZs is available via the following link: http://publications.naturalengland.org.uk/category/1723382

Further information on the special interest features, the conservation objectives, and relevant conservation advice packages for designated sites is available on our website https://designatedsites.naturalengland.org.uk/

Please note: As there is only an area of search for the cable corridor at this stage, we are unable to provide a definitive list of sites and features relevant to the project, but these should be identified and fully considered within the application documents. We note that the EGL 3 environmental survey programme has not yet been undertaken and therefore the possibility of habitats being present within the survey corridor outside of those listed exists.

Highly Protected Marine Areas (HPMAs)

The red line boundary of the Project does not fall within or adjacent to any HPMA.

Further information on the location of existing HPMAs can be found at Highly Protected Marine Areas (HPMAs) - GOV.UK (www.gov.uk). The MEA should include a full assessment of the direct and indirect effects of the development on the features of any HPMA and should identify such mitigation measures as may be required in order to avoid, minimise, or reduce any adverse significant effects.

Sites of Special Scientific Interest (SSSIs)

Further information on the location of SSSIs and their special interest features can be found at www.magic.gov.uk . The application should include a full assessment of the direct and indirect effects of the development on the features of special scientific interest and should identify such mitigation measures as may be required in order to avoid, minimise, or reduce any adverse significant effects.

The red line boundary of the Project is within or adjacent to the following SSSIs:

- Saltfleetby – Theddlethorpe Dunes SSSI
- Chapel Point to Wolla Bank SSSI
- The Lagoons SSSI
- Humber Estuary SSSI
- Sea Bank Clay Pits SSSI

Please note: As there is only an area of search for the cable corridor at this stage, we are unable to provide a definitive list of sites and features relevant to the project, but these should be identified and fully considered within the application documents. We note that the EGL 3 environmental survey programme has not yet been undertaken and therefore the possibility of habitats being present within the survey corridor outside of those listed exists.

2.7. Protected Species - Species protected by the Wildlife and Countryside Act 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2017 (as amended)

The Application should assess the impact of all phases of the proposal on protected species (including, for example, pinnipeds (seals), cetaceans (including dolphins, porpoises, and whales), fish (including seahorses, sharks, and skates), marine turtles, birds, marine invertebrates, bats, etc.). Information on the relevant legislation protecting these species can be reviewed on the following link https://www.gov.uk/government/publications/protected-marine-species. Natural England does not hold comprehensive information regarding the locations of species protected by law but advises on the procedures and legislation relevant to such species. Records of protected species should be sought from appropriate local biological record centres, nature conservation organisations, NBN Atlas, groups, and individuals; and consideration should be given to the wider context of the site for example in terms of habitat linkages and protected species populations in the wider area, to assist in the impact assessment.

The conservation of species protected by law is explained in Part IV and Annex A of Government Circular 06/2005 Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System. The area likely to be affected by the proposal should be thoroughly surveyed by competent ecologists at appropriate times

of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES.

In order to provide this information, there may be a requirement for a survey at a particular time of year. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and where necessary, licensed, consultants.

2.8. Habitats and Species of Principal Importance

The Application should thoroughly assess the impact of the proposals on habitats and/or species listed as 'Habitats and Species of Principal Importance' within the England Biodiversity List, published under the requirements of S41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the NERC Act 2006 places a general duty on all public authorities, including local planning authorities, to conserve and enhance biodiversity. Further information on this duty is available here https://www.gov.uk/guidance/biodiversity-duty-public-authority-duty-to-have-regard-to-conserving-biodiversity .

Government Circular 06/2005 states that Biodiversity Action Plan (BAP) species and habitats, 'are capable of being a material consideration in the making of planning decisions. Natural England therefore advises that survey, impact assessment and mitigation proposals for Habitats and Species of Principal Importance should be included in the application. Consideration should also be given to those species and habitats included in the relevant Local BAP.

3. Nationally Designated Landscapes

Consideration should be given to any potential direct or indirect impacts to designated landscapes.

Please note: As there is only an area of search for the cable corridor at this stage, we are unable to provide definitive advice on specific designated landscapes at this time. However, we note that the settings of the Lincolnshire Wolds National Landscape may require further consideration once the final cable corridor is confirmed.

4. Water Quality

Increases in suspended sediment concentrations (SSC) during construction and operation (e.g., future dredging works) have the potential to smother sensitive habitats. The Application should include information on the sediment quality and potential for any effects on water quality through suspension of contaminated sediments. The EIA/Application should also consider whether increased suspended sediment concentrations resulting are likely to impact upon the interest features and supporting habitats of the designated sites as listed above.

The Application should consider whether there will be an increase in the pollution risk as a result of the construction or operation of the development.

For activities in the marine environment up to 1 nautical mile out at sea, a Water Framework Directive (WFD) assessment is required as part of any application. The Application should draw upon and report on the WFD assessment considering the impact the proposed activity may have on the immediate water body and any linked water bodies. Further guidance on WFD assessments is available here:

https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters

5. Air Quality

Air quality in the UK has improved over recent decades but air pollution remains a significant issue; for example, over 97% of sensitive habitat area in England is predicted to exceed the Page 11 of 17 critical loads for ecosystem protection from atmospheric nitrogen deposition (England Biodiversity Strategy, Defra 2011). A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The planning system plays a key role in determining the location of developments which may give rise to pollution, either directly or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water, and land. The assessment should take account of the risks of air pollution and how these can be managed or reduced. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System (www.apis.ac.uk). Further information on air pollution modelling and assessment can be found on the Environment Agency website.

6. Climate Change Adaptation

The England Biodiversity Strategy published by Defra establishes principles for the consideration of biodiversity and the effects of climate change. The Application should reflect these principles and identify how the development's effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained. The NPF requires that the planning system should contribute to the enhancement of the natural environment by establishing coherent ecological networks that are more resilient to current and future pressures which should be demonstrated through the Application. Further information is available from the Committee on Climate Change's (CCC) Independent Assessment of UK Climate Risk, the National Adaptation Programme (NAP), the Climate Change Impacts Report Cards (biodiversity, infrastructure, water etc.) and the UKCP18 climate projections.

7. Contribution to Local Environmental Initiatives and Priorities

Due to the lack of detail available at this stage, Natural England is unable to provide any information on how this development fits with local initiatives and priorities such as the delivery of green/blue infrastructure, biodiversity opportunity areas or biodiversity enhancements.

8. Cumulative and In-combination Effects

It will be important for any assessment to consider the potential cumulative effects of this proposal, including all supporting infrastructure, with other similar proposals and a thorough assessment of the 'in combination' effects of the proposed development with any existing developments and current applications. A full consideration of the implications of the whole scheme should be included in the Application. All supporting infrastructure and activities should be included within the assessment.

The Application should include an impact assessment to identify, describe and evaluate the effects that are likely to result from the project in combination with other projects and

activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment, (subject to available information):

- existing completed projects.
- approved but uncompleted projects.
- ongoing activities.
- plans or projects for which an application has been made and which are under consideration by the consenting authorities; and
- plans and projects which are reasonably foreseeable, i.e., projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

Natural England's advice on the scope and content of an Environmental Statement is given in accordance with the National Infrastructure Planning Advice Notes: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/ . We advise that all Applications use this as a template.

9. Use of the Rochdale Envelope

Natural England recognises the need to use a Rochdale Envelope approach to allow flexibility in project design to ensure that changes in available technologies and project economics can be considered post consent. However, Natural England has concerns over the extent to which uncertainty in ground conditions is driving the extent of the project envelope, and that the Rochdale Envelope approach is resulting in the provision of insufficient baseline information to inform both project design and assessment of impacts. The lack of understanding of the ground conditions results in the use of Maximum Design Scenarios (MDSs) that are conservative enough to make up for that lack of understanding and allow for all eventualities. This in turn translates into a vast number of variables, causing difficulties in assessment, as it is difficult to identify and assess a realistic worst-case scenario for each of the relevant receptors with any certainty, which in turn necessitates precautionary assessments given this uncertainty. That presents challenges when it comes to identifying appropriate mitigation measures.

10. Ecological Join up Between Marine Receptor Assessments

Natural England advises that changes to marine processes and benthic ecology could cause an indirect impact on mobile interest features from designated sites through changes to supporting habitats and prey availability. Ecosystem impacts should be thoroughly considered within the relevant receptor chapters throughout the Application documents.

11. Landfall

Coastal environments are subject considerable historic and future change. Therefore, should trenchless techniques be considered then a feasibility study informed by geotechnical investigations will be required at the time of consent, particularly within the boundary of a designated site. We would also advise that the Applicant should consider how the coast may alter throughout the lifetime of the project, both in terms of vertical change in beach profile and coastal retreat. In other words, how will cable burial and siting of infrastructure be managed throughout the lifespan of the project? We advise that the landfall assessment needs to consider the effects on the hydrodynamic regime due to the

presence of cable protection, equipment such as jack-up rigs, cable-laying vessels, and cofferdams etc. Plus, potential impact of intertidal access and/or vehicle traffic on foreshore profile change or cliff erosion over all phases of the project.

12. Cable protection – Including Secondary Scour

In addition, Natural England's position provided for Hornsea Project Three, Norfolk Vanguard and Norfolk Boreas in relation to Adverse Effects on Integrity from the placement of cable protection remains unchanged and therefore cable protection within benthic marine protected areas should be avoided and where that is not possible every effort should be made to mitigate the impacts. To achieve this, we advise that a cable burial risk assessment is undertaken as part of the application process informed by comprehensive geotechnical and geophysical surveys. If cable protection is required options that have the greatest success of removal with least impact to interest features should be taken forward. A site integrity plan could then be used to determine the risk to the conservation objectives for the site and determine the requirements for any compensation measures.

Please note that impacts from secondary scouring around cable protection should also be factored into both marine processes and benthic assessment.

13. Marine Mammals Impact Assessments

If not already considered, we advise Applicants to include reference to the following:

- IAMMWG. 2022. Updated abundance estimates for cetacean Management Units in UK waters (Revised 2022) https://hub.jncc.gov.uk/assets/3a401204-aa46-43c8-85b8-5ae42cdd7ff3
- Scientific Advice on Matters Related to the Management of Seal Populations: 2021 http://www.smru.st-andrews.ac.uk/files/2022/08/SCOS-2021.pdf
- Carter et al. (2022) https://www.frontiersin.org/articles/10.3389/fmars.2022.875869/ful

14. Red-Throated Divers

Natural England highlights our increasing concerns in relation to disturbance and/or displacement of red-throated divers features from the more persistent presence of offshore wind farm and oil and gas related vessel activity which could make a meaningful contribution to in-combination effects to the Greater Wash SPA and indeed the adjacent Outer Thames Estuary SPA depending on the transit route. As such, we advise appropriate consideration of both seasonal timing of construction and O&M works, and vessel transit route is included within the Application.

Natural England recommends that where possible, any construction and O&M activities avoid the months of November to March inclusive. Vessel transit routes outside of existing navigation routes through the Greater Wash SPA and Outer Thames Estuary, depending on the port of origin, should also be avoided during these winter months. Natural England advises as minimum use of best practice measures between 1st November and 31st March to mitigate and therefore minimise disturbance to red-throated diver namely:

- Selecting routes (when transiting to site) that avoid aggregations of red-throated diver and common scoter, where practicable.

• Restricting (to the extent possible) vessel movements when transiting to the site to existing navigation routes (where the densities of divers are typically relatively low).

• Avoidance of over-revving of engines (to minimise noise disturbance); and

• Briefing of vessel crew on the purpose and implications of these vessel management practices (through, for example, toolbox talks). Although, we do highlight that dependent on the level of proposed activity across the designated site the best practice protocol as set out above still may not minimise the in-combination impacts to an acceptable level.

15. Outline Plans

Natural England advises that outline documents and/or assessment will need to be included in the Application to ensure that all impacts have been considered and appropriately managed.

Annex 3: Detailed comments received from Natural England on the project-specific aspects of the report

Point No.	Section	Para/Table	Topic	Comments	Recommendations
1.	2.5.4	Final Paragraph	Scoping Boundary	This paragraph states that the longer route option "*avoids the Holderness Offshore MCZ but crosses the northern tip of the Silver Pit glacial tunnel valley feature outside of the site*". Based on the map on Pg. 55, it appears that this route option does pass through a section of the MCZ. The northern tip of the glacial tunnel valley feature that the route crosses is a protected feature within the MCZ.	Please clarify whether the statement or the map is correct and adjust scoping assessment accordingly.
2.	6.6	Tab. 6-5	Marine Processes	Impacts of disturbance of subtidal seabed morphology and disturbance of intertidal morphology by decommissioning has been scoped out due to being considered as having an impact of similar or lower magnitude significance of effect as the construction activity. Construction activity for both impacts was scoped in.	Whilst uncertainty remains on decommissioning methods, decommissioning impacts should be scoped in for these impacts.
3.	6.6	Tab. 6-5	Marine Processes	The project has not yet been able to rule out open cut trenching for landfall locations. Therefore, there is potential for the project to cause modifications to tidal and wave regimes and potentially alter sediment transport particularly within the intertidal zone. The Humber Estuary SAC and Saltfleetby to Theddlethorpe Dunes SAC are within the zone of influence for the scoping boundary. Both sites contain features which rely on sediment transport along the coast.	The project should scope in modification to tidal and wave regimes from construction activities within the intertidal zone.

4.	7.6	Tab. 7-6	Benthic and Intertidal Ecology	Temporary increase and deposition of suspended sediments from; boulder clearance, PLGR, pre-sweeping of sand waves; cable burial and trenching; anchoring/jack-up foundations; and deposit of external cable protection with regards broadscale habitats and Annex I *Sabellaria spinulosa* reefs has been scoped out. These habitats, including Annex I *Sabellaria spinulosa* reef, have a medium sensitivity to heavy smothering which the applicant has identified as a likely impact within a 100m corridor of operations.	The MMO recommends these potential impacts continue to be scoped in.
5.	7.6	Tab. 7-6	Benthic and Intertidal Ecology	The impact of temporary habitat loss / seabed disturbance on Subtidal broadscale habitats during construction and operation have been scoped out. Subtidal coarse sediments, sands and mixed sediment are all protected broad-scale features of the Holderness Offshore MCZ which support a wide range of infauna and have 'Recover' conservation objectives. One of the cable route options passes through 21km of the Holderness Offshore MCZ.	Scope in the potential impacts of temporary habitat loss / seabed disturbance during construction and operation on subtidal broadscale habitats.
6.	7.6	Tab 7-6	Benthic and Intertidal Ecology	Impacts from permanent habitat loss through external cable protection on subtidal broadscale habitats has been scoped out. One of the cable route options passes through 21km of the Holderness Offshore MCZ and use of cable protection hinders the 'Recover' conservation objectives of the protected broadscale habitat features.	Scope in the potential impacts of permanent habitat loss through external cable protection on subtidal broadscale habitats during operation.

7.	9.6	Tab. 9-10	Intertidal and Offshore Ornithology	Impacts of temporary increases and deposition of suspended sediments for all phases of development have been scoped out as an impact for bird species which dive for prey. The scoping document acknowledges an impact pathway but rules out significant impact based on rapidly dissipating sediment plumes and a narrow and relatively small area of impact. The area of search for the cable corridor crosses the Greater Wash SPA and the wider area is potentially considered as foraging habitat for designated sites in the wider region.	We advise that depending on whether or not there will be seasonal restriction for cable installation further assessment of the areas to be impacted due to the risk of localised displacement from preferred feeding grounds and changes to prey availability. This is particularly pertinent for Red Throated Divers. Therefore, this impact should be scoped in where source and receptor pathways exist.

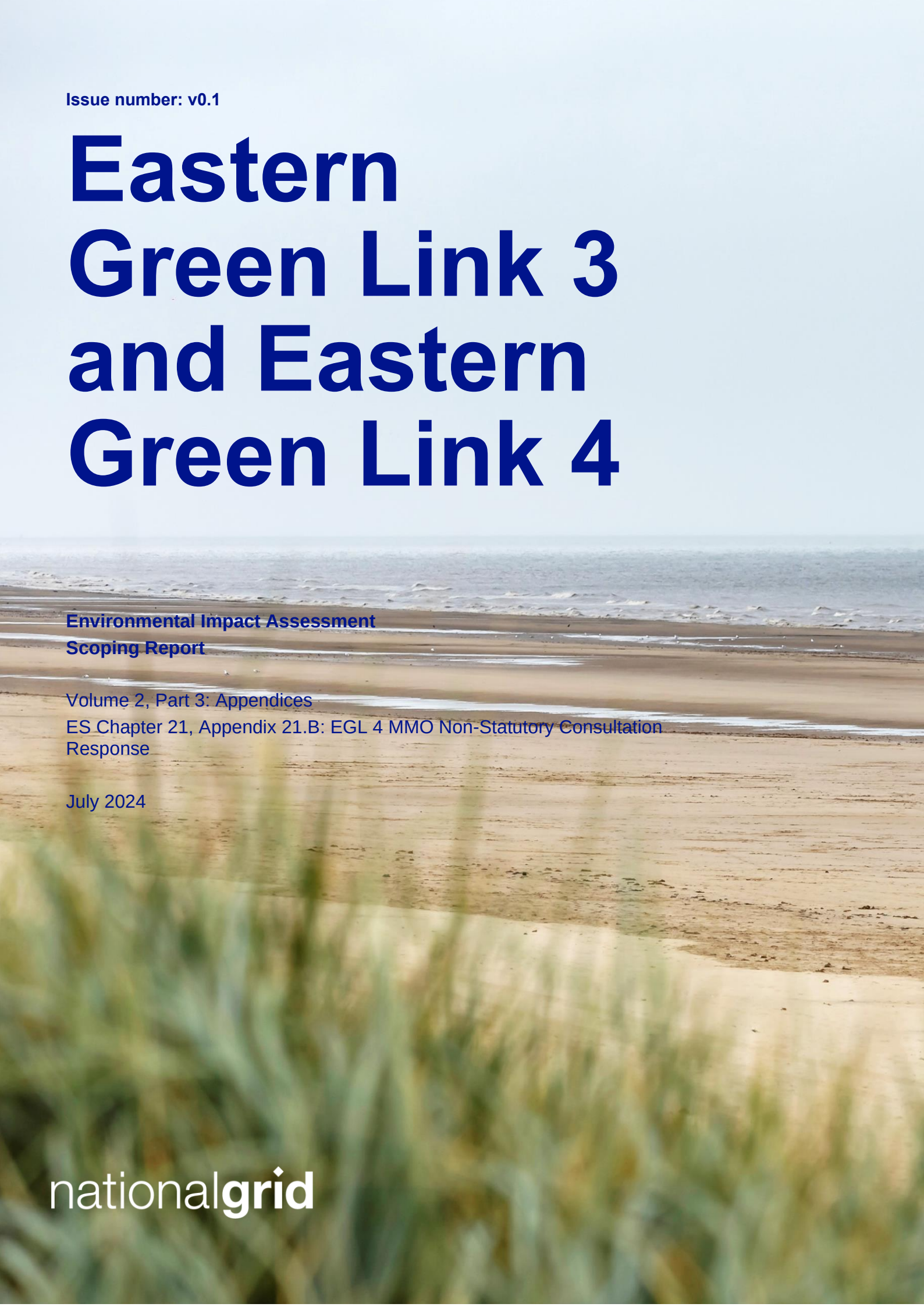
Issue number: v0.1

Eastern Green Link 3 and Eastern Green Link 4

Environmental Impact Assessment
Scoping Report

Volume 2, Part 3: Appendices
ES Chapter 21, Appendix 21.B: EGL 4 MMO Non-Statutory Consultation Response

July 2024



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Your reference: ENQ/2023/00061

[By email only]

15 May 2024

Dear Miss James

Eastern Green Link 4 (EGL4) – MMO Non-Statutory Consultation Response

National Grid Electricity Transmission (NGET) submitted an enquiry to the Marine Management Organisation (MMO) on 18 April 2023 **(ENQ/2023/00061).** As part of this enquiry, a non-statutory environmental report entitled "Eastern Green Link 4 Marine Environmental Appraisal Non-Statutory Scoping Report" ("the report") was submitted to the MMO on 24 January 2024.

The MMO has reviewed the report in consultation with our scientific advisors at the Centre for Environment, Fisheries and Aquaculture Science (Cefas), and other relevant consultees. The MMO has the following comments to make:

1. Fisheries and Fish Ecology

1.1. The evidence base proposed for use in the assessment is generally appropriate and makes use of a range of publicly available data, information and publications. The relevant marine fish species found across the study area have been identified, as well as the migratory species which have protected status namely; river lamprey *(Lampetra fluviatilis)* and sea lamprey *(Petromyzon marinus)* which are features of the Humber Estuary special area of conservation (SAC), and European smelt *(Osmerus eperlanus)* which is found in the North East of Farnes Deep Highly Protected Marine Area (HPMA).

1.2. The report makes reference to the use of Coull *et al.,* (1998), Ellis *et al.,* (2012) and Aires (2014) to identify the spawning and nursery grounds that overlap the Eastern Green Link 4 (EGL4) study area and the spawning seasons of the relevant fish species. The data sources used are appropriate and the relevant information has been summarised in Table 8-7.

1.3. In Table 8-7, the spawning zone for Atlantic herring *(Clupea harengus)* is stated as 'pelagic' but should be corrected to 'demersal', as the species lays eggs on gravel substrates. Also in Table 8-7, the spawning season for Atlantic herring is indicated as November to January (inclusive) which is incorrect (these spawning months refer to the Downs herring stock in the English Channel and southern North Sea). The table should be corrected to show the spawning season for the Banks/Dogger stock as August to October (inclusive) and for the Buchan stock as August to September (inclusive), see map in Annex 1 taken from Coull et al. (1998) and Ellis et al. (2012). This comment also applies to Table 8-11.

1.4. Anglerfish are indicated as having a spawning season of January to April inclusive, however, using Ellis et al. (2013) the spawning season runs January to June inclusive. This should be corrected in Table 8-7. There may be further species which appear to have incorrect spawning seasons shown in Table 8-7 (e.g. European hake), so the MMO recommends that this table is revisited, and corrections made, where appropriate. This comment also applies to Table 8-11.

1.5. Sandeel *(Ammodytes spp.)* and Atlantic herring have been identified as species that are particularly vulnerable to habitat disturbance due to both species being demersal spawners that lay eggs on seabed substrates, as well as sandeel having a close affinity to the seabed due to their burrowing nature. The report outlines the approach to determining areas of sandeel habitat and potential herring spawning habitat for the Marine Environmental Assessment (MEAp) which will include the use particle size analysis (PSA) data obtained through grab sampling and vibrocoring in the Study Area, and International Herring Larvae Survey (IHLS) data. It is proposed to follow the potential herring spawning habitat mapping methodology described in MarineSpace (2013) and use Latto et al. (2013) for mapping sandeel habitat. The approach and data described are appropriate, however please see the above points.

1.6. Concerning the PSA data obtained through grab sampling and vibrocoring, the MMO understands that these sediment samples will be collected as part of the intertidal and subtidal benthic surveys described in Section 7.2.1. Assuming that the proposed benthic survey has not yet been carried out, the MMO, in consultation with Cefas, recommends that you (the Applicant) ensure that there is good sediment sampling coverage across the whole cable corridor route, ideally with grab sampling every 1km in areas of historic herring spawning habitat (see Coull et al., 1998). Whilst geophysical surveys can provide a broad indication of seabed sediment types, the data cannot be reliably used to determine the component fractions of sediments that are needed to establish the suitability/unsuitability of sediments for spawning herring and sandeel habitats.

1.7. The report also refers to the upcoming Sandeel and Herring report by Marine Space. It should be noted that the MMO, in consultation with Cefas, are content with the new methods and these have been approved. Therefore, the MMO recommends contacting MarineSpace to ask if their new methods are available. These new methods incorporate additional sediment datasets from the Cefas OneBenthic tool, which may help improve the coverage of PSA data across the study area.

1.8. The most recent 10 years of IHLS data should be used to inform the herring potential spawning habitat assessment.

1.9. Generally, the appropriate receptors have been scoped into the assessment, although there are some changes required (see above points). Fish species with a demersal life stage will be scoped into the assessment of impacts from temporary habitat loss/seabed disturbance during all phases of the development, whereas entirely pelagic species will be scoped out. The MMO agrees that this is appropriate.

1.10. Fish species with a demersal life stage will be scoped into the assessment of impacts from permanent habitat loss during the construction and operation phases. This is also appropriate. However, unless assurances can be provided that all cable protection will be removed at the end of the project's lifetime, then the MMO recommends that fish with a demersal life stage are also scoped into the assessment for the decommissioning stage.

1.11. Fish species with a demersal life stage will be scoped into the assessment of impacts from temporary increase and deposition of suspended sediments from pre-sweeping during construction and decommissioning, which the MMO agrees with. However, all fish species have been scoped out of the assessment for these same impacts during seabed preparation work. For all species except herring, the MMO, in consultation with Cefas, is content with this decision. However, it is considered that herring should be scoped in at the construction and decommissioning phases, on the basis that increased suspended sediment and deposition caused by cable burial, trenching, and pre-lay grapnel run activities have the potential to cause smothering of eggs and newly hatched larvae in areas of herring spawning habitat.

1.12. Electromagnetic changes / barrier to species movement caused by electromagnetic fields (EMF) has been scoped in for all fish during the operational phase, which the MMO agrees with. However, impacts from temperature increase from the presence of cables has been scoped out of further assessment for all species with a demersal life stage. The MMO notes that the cable burial risk assessment has not been carried out yet, so the minimum cable burial depth is not yet known. For this reason, the MMO, in consultation with Cefas, recommends scoping in the impact of temperature increase from cables during operation due to the potential for sediment heating in areas of sandeel and herring spawning habitats.

1.13. The MMO notes the following minor corrections required for the MEAp:

- Section 8.4.1.5 refers to smooth hound *(Mustelus mustelus).* It should be noted that there are no recent confirmed records of common smooth-hound being captured in UK waters. A genetic study (Farrell et al., 2009) confirmed that all specimens investigated were found to be starry smooth-hounds (Mustelus asterias). Therefore, it is more appropriate to refer to Mustelus spp. in the MEAp.

- Section 8.4.1.5 refers to common skate *(Dipturus batis),* however this is now considered to be two species; blue skate *(Dipturus flossada)* and flapper skate *(Dipturus intermedia).*

2. Shellfisheries

2.1. The MMO, in consultation with Cefas, does not agree with the receptors scoped out of future assessment. The scoping in and out of receptors that has been presented is generally high level and does not refer to specific species (except for cockles). Where cockles have been scoped in, it is expected that other bivalve species should also be scoped in as they are expected to have similar impact pathways and sensitivity levels. The proposed project area includes high abundance areas for Edilbe Crab *(Cancer pagarus)* and European Lobster *(Homarus Gammarus),* and the MMO would expect to see consideration of the spawning and over wintering stages for these species. Currently, it is unclear if this has been considered.

2.2. The proposed project is in an area with a high population abundance of Edible Crab and Lobster, therefore the MMO would expect the impacts of spawning and overwintering in both species to be considered.

2.3. In Table 8-5 on page 116 of the report, the table has titles *'Most caught demersal species by weight (t)'* and *'Most caught demersal species by value (£s)'*. The word *demersal* in both cases should be changed to *shellfish* as shellfish are not demersal species. In multiple points of the report, shellfish have been referred to as being demersal. While, shellfish do live in the demersal zone, they are not usually considered as demersal species. For correctness, the MMO, in consultation with Cefas, would expect to see the three discrete categories: demersal, pelagic and shellfish.

3. Benthic Ecology

3.1. The impact pathways (source-pressure-receptor interactions) that are proposed to be scoped in and out for benthic ecology are presented in Table 7-6 of the report. The MMO, in consultation with Cefas, agrees with the pathways that have been scoped in, and also agree that some pathways can be scoped out. However, some of the pathways that are proposed to be scoped out should be scoped in, see points below.

3.2. The MMO agrees that all benthic ecology receptors can be scoped out for 'underwater noise changes', 'electromagnetic changes', 'temperature increase', and 'accidental spills' for the reasons provided in the report.

3.3. The following impact pathways are proposed to be scoped out but should be scoped in:

- 'Temporary habitat loss / seabed disturbance' on 'subtidal broadscale habitats' – the extent of physical disturbance to the seabed for a cable of this length is

substantial and will affect a broad range of benthic habitats and species. This impact pathway should therefore be assessed in full, with data from the upcoming site-specific survey (and other relevant data sources highlighted) used as the benthic ecology baseline against which impacts are assessed.

- 'Permanent habitat loss / seabed disturbance' on 'subtidal broadscale habitats' – the proposed cable route passes through various sedimentary habitat types that would be permanently altered if cable protection is required, due directly to the material added to the seabed and also any associated scouring. Although such changes would likely be localised, they may cause impacts to regionally rare habitats, biotopes, or species. This impact should therefore be assessed against the complete benthic ecology baseline, once available.

- 'Temporary increase and deposition of suspended sediments' (due to trenching, boulder clearance etc) on 'broadscale habitats' and 'Annex I Sabellaria spinulosa reefs' – substantial heavy deposition will occur within the vicinity of the cable route and, therefore, impacts should be assessed against the complete benthic ecology baseline for this area.

- 'Introduction or spread of marine invasive non-native species (MINNS)' on 'subtidal species' – whilst the MMO, in consultation with Cefas, agrees that the measures proposed will minimise the risk of introducing MINNS, there is a risk that any cable protection that is required will provide hard surfaces that act as steppingstones to facilitate the spread of MINNS in the region. This is a particular concern in areas naturally dominated by soft sediments, as the introduced hard habitat could provide a new niche that increases connectivity with other natural or artificial hard habitats within the dispersal range of species. For the larvae of benthic invertebrate species, dispersal distances of tens of kilometres to more than a hundred kilometres are not unheard of (Álvarez-Noriega et al., 2020). This potential impact pathway should therefore be scoped in and assessed.

3.4. No specific monitoring plans are proposed for benthic ecology receptors, which is to be expected at this stage of the application. The MMO would expect the position on monitoring requirements to be detailed for benthic ecology receptors in the MEAp.

3.5. The proposed data sources to characterise the benthic ecology baseline include site-specific surveys (see Section 7.2.1 of the report) supplemented by publicly available data (see Section 7.2.2 of the report). The MMO, in consultation with Cefas, considers this appropriate.

3.6. The report states that intertidal and subtidal benthic surveys will be carried out (see Section 7.2.1). However, this section doesn't currently describe any sampling approaches that the MMO, in consultation with Cefas, would expect to be carried out for intertidal surveys. The geophysical, benthic grab and drop-down video techniques described are typically associated with subtidal surveys. It should therefore be confirmed that intertidal benthic surveys will be carried out and the proposed methods should be described.

3.7. It is indicated that characterisation will be based on data from a Phase 1 intertidal habitat walkover survey, which has already been conducted. It should be clarified whether more detailed intertidal surveys are also planned and whether they too would be used to inform characterisation. If not, then justification should be provided for this decision.

3.8. It is unclear what standards will be followed when generating sediment and faunal data from the grab samples. This should be carried out following the recommendations of the Northeast Atlantic Marine Biological Analytical Quality Control (NMBAQC) scheme (Worsfold et al. 2010; Mason 2022).

3.9. The design and methods of the subtidal surveys are described at a broad level, leaving it unclear exactly where benthic sampling stations will be placed in relation to the distribution of habitats within the scoping boundary. It is indicated that the placement of sampling stations will be informed by the geophysical survey outputs (and other data sources) but that a spacing of approximately 5-10 km in offshore sections of the cable corridor, and 2-5 km in nearshore and coastal areas, is expected (Section 7.2.1 of the report). It is not possible to say whether this will be sufficient at this stage. However, the report states that relevant stakeholders will be consulted prior to the survey commencing.

3.10. It is noted that, in contrast to the Eastern Green Link 3 (EGL3) project, benthic sampling stations for EGL4 are proposed to be spaced at 2-5 km intervals in nearshore and coastal areas (as opposed to 1 km for EGL3) and at 2 km intervals in marine protected areas (MPAs) (as opposed to 500 m for EGL3). It should be explained why space stations are intended to be placed further apart for the EGL4 surveys compared to the EGL3 surveys.

3.11. In addition to the data sources used in the report, the Environment Agency (EA) have informed the MMO that they also hold data on intertidal invertebrate assemblages, subtidal epifauna and the size distribution of intertidal sediments, collected to assess the impacts of beach nourishment within the Saltfleet to Gibraltar Point beach management scheme. If you (the applicant) would like to request the data mentioned above, you should email the request to LNenquiries@environment-agency.gov.uk.

4. Coastal Processes

4.1. The options that are scoped in and out in the report are clear and fully supported. The MMO, in consultation with Cefas, highlight there is a third option of partial scoping by reducing the scope of the “scope in” option. In terms of cable burial, the balance between depth of burial (which will be taken forward in the Cable Burial Risk Assessment), Scour protection, and local sediment transport should be assessed.

4.2. The beach landing site is highly dynamic – consideration should be made for the cable integrity at the end of its lifespan in terms of beach profile/cliff erosion due to climate change.

4.3. The use of Mass Flow Excavation (MFE) or sometimes called Controlled Flow Excavation (CFE) is a powerful tool and is likely to be the most effective "disturber" of the seabed and therefore should only be used as the worst-case scenario.

4.4. At this scoping stage, the MMO, in consultation with Cefas, notes that full evidence set /data sources are not required. Please note however that this will be required for the latter stages. Datasources from Cefas's WaveNet (www.cefas.co.uk/wavenet) and OneBenthic (OneBenthic) should also be used.

4.5. Please note, latest information that is available suggests that Outer Dowsing Offshore Windfarm (ODOW) are also proposing to bring their export cable ashore between Theadlethorpe and Alderby Creek. Therefore, the cumulative impacts are potentially significant between EGL3, EGL4 and ODOW and therefore should be considered.

4.6. The MMO, in consultation with the EA, has concerns that decommissioning activities has been scoped out, and only the removal of cables has been considered, rather than the casing/tunnels that the cables go through. This is important, as when the coast erodes, then the scour protection/casing/tunnels/lined access pits will potentially be left exposed on a lowered foreshore. Therefore there should be some consideration for the removal of these structural items should this occur.

4.7. Additionally, modifications to the tidal/wave regime has been scoped out. The MMO, in consultation with the EA, appreciates that it may be a short-duration activity, but it may be up to a year, from reading of other proposals, between the installation of cased cable corridors/tunnels from landfall to the actual installation of the cables themselves. The report does not appear to advise if possible impacts or discounted impacts have been modelled without investigation. Neither does there appear to be information in respect of the basis of this assumption. We would suggest that if justification/evidence is not available then these issues should be scoped in.

5. Underwater Noise

5.1. Despite confirming in section 10.5 of the report that underwater noise impacts from vessels and equipment would be assessed, Table 10.7 subsequently scopes out the potential impacts of *'underwater noise changes' (presence of project vessels and equipment including cable trenching)* on marine mammals from further assessment (during the construction, operational and decommissioning phases). The MMO, in consultation with Cefas, partially agrees with the justification provided that sound associated with the construction, removal or operation of submarine cables is less harmful compared to impulsive sound activities such as seismic surveys, military activities or construction work involving pile driving (OSPAR Convention 2012).

5.2. In terms of auditory injury (i.e. Permanent Threshold Shift (PTS) and Temporary Threshold Shift (TTS)), the main concern with non-impulsive or continuous noise sources such as cable laying activities is the potential effects of cumulative sound exposure. The risk of impact depends on the duration of the activity, and on the position of the animal in relation to the source. To determine potential effect ranges, this needs to be modelled using appropriate noise exposure criteria. The MMO, in

consultation with Cefas, agrees that exposure over prolonged periods would (most likely) be necessary before there was a risk of injury. Given the transient nature of the installation activities along the cable route, and the mobile nature of cetacean and pinniped species, the risk of auditory injury is likely to be low.

5.3. Some disturbance can be expected from the operations and vessel presence, however this has not been considered. As noted in the OSPAR Agreement 2012-2, there is little information available on potential noise impacts due to the installation (or removal) and operation of sub-sea cables (OSPAR 2008a). Noise associated with the laying of cables adds to the already prevailing acoustical disturbances. Therefore, where appropriate, the timing, duration and method of any cable laying operations should be managed to minimise impacts.

5.4. Whilst recognising that the risk of auditory injury is likely to be low, the MMO does not believe that underwater noise impacts should be fully scoped out at this stage. The MMO, in consultation with Cefas, recommends that underwater noise impacts are further considered within the MEAp, including the potential for disturbance.

5.5. Section 10.5 of Chapter 10 states that the MEAp chapter will be prepared in accordance with the following guidance, which the MMO supports:

- Technical guidance for assessing the effects of anthropogenic sound on marine mammal hearing (NOAA, 2018)
- Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects. (Southall et al., 2019)
- Sound Exposure Guidelines for Fishes and Sea Turtles (Popper et al., 2014)
- Guidance for assessing the significance of noise disturbance against Conservation Objectives of harbour porpoise SACs (England, Wales & Northern Ireland) (JNCC, 2020)

6. Dredge and Disposal

6.1. The MMO notes that the release of contaminated sediments from cable burial has been scoped out. The temporary resuspension of contaminants in sediments has the potential to result in adverse effects on water quality, however, there are no records indicating the presence of contaminated sediments within the Study Area at levels requiring further investigation. However, there is no signposting to what these records are to close this out. If you (the Applicant) can show that the material is likely to be coarse from the PSA then this material is likely to have potential for low risk with regard to release of contaminants. However, where landfall of cables is anticipated there is potential for disturbance of sediments particularly inshore if open trenching (option 2) is undertaken. The MMO, in consultation with Cefas, recommends the scoping in of potential contamination release from the cable laying during construction at this stage (Table 6-6).

6.2. The methodology and chemicals including quantity used for the HDD together with potential risk from punch out of release to the marine environment should be provided in the MEAp for review.

6.3. Appropriate data sources in relation to sediment quality have been used, however the MMO recommends ensuring that the data collected aligns with the MMO's guidelines here: https://www.gov.uk/guidance/marine-licensing-sediment-analysis-and-sample-plans. As this is a voluntary MEAp, and as the works do not fall under the purview of the OSPAR Convention (and noting the various licensing exemptions for cable works), the OSPAR guidelines for sediment sampling do not strictly apply. As such, the MMO recommends ensuring that a representative number of samples is taken from the survey area, and that the locations are evenly distributed.

7. Nature Conservation

7.1. Inshore

Approach to Scoping

7.1.1. The MMO, in consultation with Natural England (NE), notes that due to the timing of the scoping report, the information contained within it is high level and based on a large area of search. The rationale for the inclusion of these large boundaries is due to substantial components of the project remaining undetermined at the point of scoping, but also other aspects including incomplete data collection. This makes it difficult to provide targeted advice on the scope of the assessments at this stage and creates consenting risks further down the line with identifying and resolving environmental impacts and concerns. Additionally, we highlight that, because we are unable to confirm with a high level of confidence that the data collection proposed will be sufficient to inform the assessments, we are also unable to advise on the potential scale and level of risk this project may pose to nature conservation receptors. Without having this understanding, it is unclear to the MMO, in consultation with NE, how this project will progress towards application and ensure that there is sufficient time in the pre-application phase to identify and address all potential environmental concerns.

7.1.2. Please note, NE's advice has been presented to the MMO in line with their advice to projects where an Environmental Impact Assessment (EIA) would be required to ensure consistency between large infrastructure projects in the marine environment. Therefore, NE recommend that the project incorporates all relevant guidance principals for EIAs within its MEAp as provided in Annex 2 of this response. Case law and guidance has stressed the need for a scientifically robust set of environmental information to be available for consideration prior to a decision being taken on whether or not to grant permission.

Focus of the Non-Statutory Scoping Report

7.1.3. When scoping a project, developers, or their consultants, should satisfy themselves that they have addressed all the potential impacts and the concerns of all organisations and individuals with an interest in the project. Due to the capacious scoping envelope, it is challenging to scope impacts out at this stage and therefore difficult for the MMO and its advisors to comment meaningfully. Further consideration is likely needed in relation to the cable corridor and need for further scoping or ongoing discussions. However, due the timing of 'the scoping' advice is focussed on the known issues of greatest importance/risk

considering the likelihood of significant effects on the environment. In these scenarios we also advise that the focus of the MEAp consultation to be on the characterisation survey methodology and approach to the assessment as there is currently insufficient evidence presented to enable us to agree impacts being scoped out.

Wider Marine Environment Impacts vs. Impacts to designated site features.

7.1.4. The MMO, in consultation with NE, is concerned that the sections of the scoping document covering Designated Sites, Marine Processes, Intertidal and Subtidal Ecology and Fish and Shellfish are not suitably aligned. We believe that there are impacts potentially being scoped out without regard to whether the receiving habitat / species is the feature of a designated site and/or supporting habitat for mobile features. Where a feature of a site, such as a broadscale habitat, has a clear Source-Impact Pathway then it should be scoped into full assessment at the MEAp. NE's Advice on Operations for each designated site within the cable route corridor and Zone of Influence (ZoI) give a clear, high-level view of what is considered sensitive to various activities.

7.1.5. Further project specific comments provided by NE on the scoping considerations for EGL4 can be found in Annex 3 of this response. The MMO requests that you (the applicant) fully address these comments and consider them in your future MEAp assessments.

Impacts to Subtidal Benthic Designated Sites

7.1.6. The development of the Project is likely to result in cabling through Holderness Offshore Marine Conservation Zone (MCZ) designated site. If impacts are found to cause lasting change, then without prejudice Measures of Equivalent Environmental Benefit (MEEB) is likely to be required. Similarly, if the project design changes and Inner Dowsing Race Bank and North Ridge Special Area of Conservation (SAC) can't be avoided then without prejudice compensation is likely to be required. Please see Annex 2 of this response for more information provided on this by NE.

Proposed Project Landfall Locations

7.1.7. The scoping boundary for the landfall location covers the area between Theddlethorpe and Anderby Creek. At its northern limit, the scoping boundary would result in landfall across Saltfleetby to Theddlethorpe Dunes & Gibraltar Point SAC/ Saltfleetby – Theddlethorpe Dunes Site of Special Scientific Interest (SSSI). These sites overlap with the intertidal areas and should therefore be scoped into the marine licence application. The MMO also advises that project design decisions made within the marine environment will impact on where the landfall occurs. The MMO, in consultation with NE, advises that every effort should be made to avoid this site as part of embedded mitigation measures to ensure no adverse effect to the features of this site.

7.1.8. Further to this, the MMO highlights the number of development projects that are currently seeking to make landfall within this section of the Lincolnshire coastline north of Wolla Bank SSSI between Anderby Creek and Theddlethorpe. There is a need to consider each of these projects collectively to ensure that

each has sufficient space without collectively conflating any nature conservation concerns. The MMO, in consultation with NE, would therefore welcome a coordinated holistic network design approach at this location.

Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards

7.1.9. NE has been leading the 'Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards' project, funded by Defra's Offshore Wind Enabling Actions Programme (OWEAP).

The project is providing up-front best practice advice on the way data and evidence is used to support offshore wind farm development and consenting in English waters, focussing on the key ecological receptors which pose a consenting risk for projects, namely seabirds, marine mammals, seafloor habitats and species and fish. The project aims to facilitate the sustainable development of low impact offshore wind by increasing clarity for industry, regulators and other stakeholders over data and evidence requirements at each stage of offshore wind development, from pre-application through to post-consent.

However, the MMO, in consultation with NE, advises that this best practice guidance is also applicable to other marine major casework. The NE advice documents are currently stored on a SharePoint Online site, access to needs to be requested from:neoffshorewindstrategicsolutions@naturalengland.org.uk. Please allow up to three working days for requests to access the site to be granted. The MMO notes that NE is currently reviewing ways of making the advice more accessible and open access.

The application should be fully informed by the recommendations in the Best Practice Advice, and please note that NE will increasingly be appraising applications with respect to the extent to which the guidance has been followed.

7.1.10. In addition, the MMO recommends reviewing NE's Cabling Lessons Learnt guidance which can be found at the below website: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010080/EN010080-001240-Natural%20England%20-%20Offshore%20Cabling%20paper%20July%202018.pdf

7.2. Offshore

Headline Statements

7.2.1. The EGL4 project has provided a scoping boundary which includes interaction with the Southern North Sea SAC (SNS SAC), the Holderness Offshore MCZ and the Greater Wash Special Protection Area (SPA). All of these sites have features sensitive to many aspects of cable laying operations. The MMO, in consultation with the Joint Nature Conservation Committee (JNCC), therefore highlight the importance of clear and adequate assessments following impact-pathway methodologies between the likely planned operations and features. We

recommend using the Site Information Centres (SICs) for these sites, paying particular attention to Conservation Objectives (COs), Attributes and Sub-attributes.

• Southern North Sea SAC: https://jncc.gov.uk/our-work/southern-north-sea-mpa/

• Holderness Offshore MCZ: https://jncc.gov.uk/our-work/holderness-offshore-mpa/

• Greater Wash SPA: Greater Wash SPA Natural England

Due to ongoing permanent impacts from human activities within these sites the mitigation hierarchy should be followed in the subsequent MEAp assessment including the potential for compensatory measures to be required as part of this licensing programme.

7.2.2. The development of the Project is likely to result in cable laying operations through Holderness Offshore MCZ designated site. The MMO, in consultation with JNCC, strongly recommends that the scoping boundary that avoids the MPA and traverses to the East is taken forward to reduce the impacts associated with the project. If impacts are found to cause lasting change, then without prejudice compensation or MEEB is likely to be required.

7.2.3. Similarly to the above point 7.1.4 of this response, the MMO, in consultation with JNCC, is concerned that the chapters covering Designated Sites, Marine Processes, Intertidal and Subtidal Ecology and Fish and Shellfish are not suitably aligned. There are impacts being scoped out without regard to whether the receiving habitat / species is the feature of a designated site. Where a feature of a site, such as a broadscale habitat, has a clear Source-Impact Pathway then it should be scoped into full assessment at the MEAp. JNCC's Advice on Operations for each designated site within the cable route corridor and ZoI give a clear, high-level view of what is considered sensitive to an array of activities.

General Comments

7.2.4. Throughout the report there appears to be some confusion about the North East of Farnes Deep MCZ and the North East of Farnes Deep HPMA. These congruent MPAs retain different features and different conservation advice which appears to have been mixed up within some sections of the report. Critically, whilst the MCZ retains broadscale habitat features and a species feature, the HPMA is designated for the protection of the entire marine ecosystem of the area. These should be reviewed and assessed separately, where assessment is appropriate.

7.2.5. The EGL4 proposed route is much closer to the borders of these overlapping sites than the associated EGL3 proposed route (80m vs 4.88 km). This difference in proximity should trigger a considerably increased level of review and assessment of the potential impacts and pressures the project could put on the HPMA.

7.2.6. The MMO highlights the JNCC SIC for the sites: https://jncc.gov.uk/our-work/north-east-of-farnesdeep-mpa-and-hpma/ which should be used to provide clarity and guidance.

Introduction (Chapter 1)

7.2.7. The scoping boundary is described as being 1km wide with a view to reducing the application boundary to 500m. Where environmental sensitivities become evident during the survey programmes the MMO, in consultation with JNCC, recommends consideration is given to retaining a 1km width to allow more options with micro-routing. This may not be appropriate when in proximity to North East of Farnes Deep HPMA where it is recommended every effort is made to ensure the cable route is as far from the MPA as possible.

Project Needs and Alternatives (Chapter 2)

7.2.8. There is a discrepancy between the final paragraph of 2.5.4 and the maps provided throughout the rest of the chapters. This paragraph states that the easternmost route option *"avoids the Holderness Offshore MCZ, but crosses the northern tip of the Silver Pit glacial tunnel valley feature outside of the site".* Based on the map on page 55, it appears that the scoping boundary for this route option does pass through a section of the Holderness Offshore MCZ.

Project description (Chapter 3)

7.2.9. Table 3-1 details pre-construction activities that may be needed for the project. The MMO, in consultation with JNCC, notes the inclusion of boulder clearance methodologies including boulder ploughs. We recommend that where boulder ploughs are included in the marine licence application, a considerable level of detail is provided which supports why this tooling is the best available option and the likely impact this activity will have on the benthic environment, this is especially critical in MPAs.

7.2.10. The MMO notes the approach of seeking to avoid potential Unexploded Ordnances (UXOs) by micro-routeing through the site and approve of this approach. We also approve of prioritising removal of any UXOs over in-situ detonation, although note this will depend on the status of the device in question i.e. if it's safe to move. We would however, advise that if in-situ detonation is required, low order deflagration should be prioritised in line with the Governments position statement on UXO clearance.

7.2.11. Should UXO clearance be required, a detailed environmental impact assessment and mitigation plan would be needed to support any licence application. Please note, UXO clearance should be applied for under a separate licence.

7.2.12. It should be noted that an update to the Governments UXO position statement is expected imminently and the MMO recommends monitoring Defra's web page for updates.

7.2.13. Table 3-3 of the report provides sufficient details on potential cable lay and burial techniques, highlighting the project decisions will be made subsequent to the geophysical survey programme and as part of the Cable Burial Risk Assessment (CBRA) process. The MMO, in consultation with JNCC, recommends that the potential for repeat passes of trenching and burying equipment be carefully reviewed as part of the marine application process and suggests that if this is included as potential mitigation it is clearly detailed how

and where this may be possible using information from the geophysical programme and CBRA. All rock placement will have to be clearly justified against the CBRA, risks to the cable and predicted burial success. The MMO notes the inclusion of “Imported sand placement” as a potential protective measure, and would appreciate more information / discussions with JNCC on the feasibility of this possibility.

7.2.14. Regarding decommissioning, recent and ongoing decommissioning requirements of Offshore Wind Farm projects, including cables and cable protection, should be reviewed.

Section 3.5.3. Construction Vessels

7.2.15. The MMO advises that the number and duration of vessels to be used throughout the works are clearly presented. This includes any surveys pre- and post- construction. The time vessels will spend inside the Greater Wash SPA and a 2.5km buffer around the SPA should also be clearly presented.

Marine Environmental Assessment Approach and Methodology (Chapter 4)

7.2.16. Within an MPA the conservation objectives do not allow for distinguishing between the value of a feature. The MMO, in consultation with JNCC, considers the features of MCZs to have equal value as features of SACs and SPAs, therefore scoring them lower in Table 4-3 is inappropriate. Including the value of a receptor into the “Sensitivity of Impact” would not be appropriate in determining significance of effect of an activity. Furthermore, if a feature of a designated site is in poor condition, meaning it requires effort to recover, it is likely to be even more sensitive to impacts. This is reflected in the conservation objective which, if impacted, would more likely be affected and the MPA taken away from achieving favourable conservation status which would translate to a higher level of impact significance. Value of a receptor is more usually applied to visual and landscape assessments and may not be appropriate for marine subtidal habitats.

Designated Sites (Chapter 5)

7.2.17. As previously mentioned, the MMO recommends care when distinguishing the North East of Farnes Deep MCZ and HPMAs. They occupy the same physical area however they have different features and management approaches. High level conservation advice can be found here: https://hub.jncc.gov.uk/assets/d12633b1-b123-4738-a594-b53c183aee68

For clarity the North East of Farnes Deep MCZ has the subtidal habitat features; ‘Subtidal coarse sediments’; ‘Subtidal mixed sediments’; ‘Subtidal mud’; and ‘Subtidal sand’ and a species feature ‘Ocean quahog (Arctica islandica)’, all of which have their own conservation objectives, attributes and sub-attributes. The North East of Farnes Deep HPMA has a single conservation objective which applies to the whole site: ‘To achieve full natural ecosystem recovery of the structure and functions, features, qualities and composition of characteristic biological communities present within HPMAs and prevent further degradation and damage to the marine ecosystem subject to natural change’.

7.2.18. Due to the proximity of the EGL4 cable corridor, the MMO, in consultation with JNCC, recommends Table 5-2 is revised to include reference to the whole ecosystem HPMA approach, where each receptor forms part of the HPMA receptor. JNCC and NE have provided high-level conservation advice for public authorities (found here) regarding decision-making activities in proximity to HPMAs. Within this advice, it is recommended that only scientific survey activities designed to directly inform HPMA monitoring, reporting and evaluation should be undertaken within, or within close proximity, to these sites. Further site-specific advice for North East of Farnes Deep HPMA can be found here: North East of Farnes Deep MPA and HPMA | JNCC - Adviser to Government on Nature Conservation

Marine Physical Processes (Chapter 6)

7.2.19. Section 6.6 should be expanded to specifically include North East of Farnes Deep HPMA as a potential receptor of changed/impacted marine physical processes. The bullet point *"Nationally or internationally designated sites with seabed/sedimentary or geological interest features below Mean High Water Springs (MHWS)"* does not encompass the whole site, whole ecosystem approach of the new HPMA as highlighted previously.

Intertidal and Subtidal Benthic Ecology (Chapter 7)

7.2.20. The MMO, in consultation with JNCC, disagrees with some of the scoping assessments presented. There are some impacts that could be scoped out when occurring outside of designated sites however as this has not been clearly defined and following on from our earlier comment, we suggest the following areas are scoped in.

7.2.21. Temporary habitat loss / seabed disturbance from; boulder clearance, pre-lay grapnel run (PLGR), pre-sweeping of sand waves; cable burial and trenching; anchoring/jack-up foundations; and deposit of external cable protection with regards subtidal broadscale habitats has been scoped out. The MMO considers these activities to have a physical impact to subtidal broadscale habitats that requires assessment, most particularly in MPAs designated for such habitats (Holderness Offshore MCZ) or where features rely on such habitats (Ocean Quahog in Holderness Offshore MCZ and Conservation Objective 3 of SNS SAC). The MMO does not consider there to be sufficient evidence to support the assumption that boulder clearance ploughs or pre-sweeping activities have a temporary impact on such features and therefore recommend these activities are scoped into the MEAp.

7.2.22. Permanent habitat loss from deposition of external cable protection with regards to subtidal broadscale habitats has been scoped out. Any external cable protection will require licensing and therefore an assessment of the impact of such protection on the local environment is required and therefore this impact should be scoped in. Whereafter pre-survey programmes, CBRA production and review, if the applicants find there is risk of external protection within MPAs then considerable assessment must be made to support justification for this impact.

7.2.23. Temporary increase and deposition of suspended sediments from; boulder clearance, PLGR, pre-sweeping of sand waves; cable burial and trenching; anchoring/jack-up foundations; and deposit of external cable protection with regards broadscale habitats and Annex I *Sabellaria spinulosa* reefs has been scoped out. Noting the EGL4 environmental survey programme has not yet been undertaken and therefore the possibility of habitats being present within the survey corridor outside of those listed exists, the MMO recommends these potential impacts continue to be scoped in. In particular, the habitats already listed, including Annex I *Sabellaria spinulosa* reef, have a medium sensitivity to heavy smothering which the applicant has identified as a likely impact within a 100m corridor of operations. It is therefore reasonable to scope in this impact. Following project-specific survey data, a refined approach may be taken within the MEAp which links to the scoping report and confirms habitat presence across the project.

7.2.24. Electromagnetic changes / barrier to species movement from presence of cables with regards to subtidal species has been scoped out in Section 7, Subtidal and Benthic Ecology. The MMO, in consultation with JNCC, considers the justification for this to be relevant and adequate however in reviewing Chapter 8 Fish and Shellfish we noted this impact has been scoped in. The MMO considers this to be a clash of scoping requirements and therefore recommends a precautionary approach is taken where this impact is scoped in for both. This should be especially relevant considering the Ocean quahog feature of Holderness Offshore MCZ.

Intertidal and Offshore Ornithology (Chapter 9)

7.2.25. The MMO, in consultation with JNCC, agrees with the proposed potential impacts scoped into the assessment on intertidal and offshore ornithology. We advise that works occurring within or around the Greater Wash SPA are carried out outside of the wintering period for common scoter and red-throated diver. Common scoters and red-throated divers are present in the Greater Wash SPA between September and April (inclusive), see seasonality tables here:https://designatedsites.naturalengland.org.uk/Marine/Seasonality.aspx?SiteCode=UK9020329&SiteName=greater%20wash&SiteNameDisplay=Greater+Wash+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality

Should this not be possible, or the timing of works unknown at this stage, then we advise that a vessel disturbance assessment is carried out as described below.

7.2.26. The conservation objectives of the Greater Wash SPA should be noted, and impacts should be assessed relative to the conservation objectives. The conservation objective for the red-throated diver feature of the Greater Wash SPA is to “Reduce the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds so that they are not significantly disturbed”. The conservation objective for the common scoter feature of the Greater Wash SPA is to “Restrict the frequency, duration and / or intensity of disturbance affecting roosting, foraging, feeding, moulting

and/or loafing birds so that they are not significantly disturbed". Disturbance to red-throated diver and common scoter needs to be managed and limited as far as possible to avoid impacting this species. See conservation objectives here:

https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9020329&SiteName=greater%20wash&SiteNameDisplay=Greater+Wash+SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=6

7.2.27. There is evidence of a behavioural response of seabirds to the presence of vessels, including taking flight and escape diving (Jarrett et al., 2022). Certain species appear to be more sensitive to vessel presence, showing avoidance behaviours at greater distances from vessels and moving further away from vessels (Kaiser et al., 2006; Fliessbach et al., 2019; Mendel et al., 2019). Red-throated divers and common scoter in particular have been observed to be displaced from vessels (Larsen & Laubek, 2005; Kaiser et al., 2006; Schwemmer et al., 2011; Burger et al., 2019; Fliessbach et al., 2019; Mendel et al., 2019; Burt et al., 2022; Jarrett et al., 2022).

7.2.28. In terms of carrying out a vessel disturbance assessment, the MMO, in consultation with JNCC, recommends that the following steps are taken. In light of evidence of vessel displacement, we advise that a 2km buffer around vessels is used for the assessment of 100% displacement of red-throated diver (Burt et al., 2022, Burger et al., 2019). In light of evidence of vessel displacement, we advise that a 2.5km buffer around vessels is used for the assessment of 100% displacement of common scoter (Fliessbach et al., 2019). We advise that the area of impact should be calculated and put into context of the SPA area by calculating the proportion of the SPA area impacted. We also advise that the number of birds impacted are calculated. Crucially, this should be done by using distribution maps of the relevant features in the relevant SPA. The distribution maps per species should be overlain with the area of impact per species to calculate the number of birds potentially impacted. This can then be put into context of the SPA population by calculating the proportion of the SPA population impacted.

7.2.29. An estimate of the number of vessel-days occurring within the SPA between September and April should also be provided, and ideally on a monthly basis if that information is available. Should these vessels be in different locations around the SPA, this also should be accounted for in the calculation of area and number of birds potentially affected.

7.2.30. For an assessment of the Greater Wash SPA, we advise that the distribution maps within Lawson et al. (2015) are used. The data contained within Lawson et al. (2015) consists of individual distribution maps per species from a combination of data from multiple surveys. Therefore, a vessel disturbance assessment should be made using data from the individual species distribution maps and a number of birds potentially displacement presented. Density distribution shapefiles for use in an assessment can be requested from JNCC.

7.2.31. Section 9.6 Table 9-5 in the *"protected feature SPA"* column for the Greater Wash SPA, common tern is mistakenly listed as a non-breeding feature when it is a breeding feature.

Marine Mammals and Marine Reptiles (Chapter 10)

7.2.32. Section 10.1 Study area definition, Table 10-1: The MMO, in consultation with JNCC, agrees with using published Marine Mammal Management Units (MUs) as the study area within which to assess potential impacts on cetacean populations and highlight that an update to the densities for the MUs was published in 2021 (https://hub.jncc.gov.uk/assets/3a401204-aa46-43c8-85b8-5ae42cdd7ff3).

7.2.33. Section 10.4 Baseline Characteristics: The MMO, in consultation with JNCC, is content that all species we would expect to be discussed have been. However, it would be beneficial if there was a summary at the end confirming which species will be considered in the impact assessment, and whether conclusions will be based on quantitative or qualitative analysis.

7.2.34. Section 10.4.3.2 Designated sites: It would be beneficial if the conservation objectives for each site were included.

7.2.35. Section 10.6 Scope of environmental appraisal, Table 10-7: The MMO, in consultation with JNCC, agrees with the activities scoped into the assessment i.e. vessel disturbance and changes in prey availability. However, UXO clearance is not included in this table. Should it be required, the potential impacts will need to be fully assessed at the application stage. As any UXO clearance would be subject to a separate licence application, this should also be made clear.

7.2.36. Table 10-7: The MMO notes that neither temporary nor permanent seabed loss has been considered within the scoping assessment. Considering that the cable route passes through the Southern North Sea SAC, for which Conservation Objective 3 states that, *"The condition of supporting habitats and processes, and the availability of prey is maintained,"* it is suggested that consideration of the potential loss of seabed is essential to ensure that the supporting habitats are maintained in the region. Whilst 'Changes in prey availability' has been scoped in, it is recommended that seabed loss is also scoped in. It is noted in Chapter 8 that temporary and permanent habitat loss of shellfish and marine species with a demersal life stage were both scoped in and therefore we recommend that this work should link with discussions of CO3 of the SNS SAC where appropriate.

7.2.37. Table 10-7: It is acknowledged that underwater noise changes have been scoped out of the assessment. The MMO, in consultation with JNCC, are content with this approach as long as the potential impacts of pre-construction surveys are assessed during Screening for Appropriate Assessment (for the

relevant Special Areas of Conservation) and European Protected Species Assessments.

Scoping Conclusions (Chapter 15)

7.2.38. There doesn't currently appear to be any methodology for scoping cumulative effects. For a cumulative assessment of visual/physical disturbance or displacement to red-throated diver and common scoter features of the Greater Wash SPA, the MMO, in consultation with JNCC, advises that all other activities which may cause a disturbance or displacement effect are included. This includes operational offshore wind farms and all vessel activity including, for example, shipping, aggregates, cable and pipeline construction and maintenance, and vessels associated with offshore wind farms. Some of these existing activities may form part of the baseline, however the combination of these activities should still be assessed, particularly with regard to the proportion of the SPA area effected. In addition, the cable route passes through both the summer and winter areas of the Southern North Sea SAC, for which there are both daily and seasonal noise thresholds, an in-combination assessment will be essential during the Appropriate Assessment stage. JNCC's Guidance on noise management in harbour porpoise SACs (2020) should be used to inform the assessment for the Southern North Sea SAC.

7.2.39. It is noted that NGET and Scottish Power Energy Networks (SPEN) requested input regarding a combined approach of the MEAp across national borders. However, it is the MMO's opinion, in consultation with JNCC, that the submissions should be country specific. This would remove superfluous content and streamline review processes. Some impacts may cross the national boundary which would have to be covered in submissions to both the MMO and MD-LOT.

8. Water Quality

8.1. The report highlights a constraint of crossing Hornsea 1 and 2 offshore wind farm export cables (Chapter 2, paragraph 2.5.3.2). However, please note there may be further constraints from the ODOW, an application for which has been submitted. ODOW also proposes landfall of its offshore wind farm export cables just south of Anderby Creek. It is noted that this is included in the scoping report (Chapter 13) together with an acknowledgement of the presence of the Triton Knoll Electrical System, which also landfalls at Anderby Creek.

8.2. When crossing flood defences (including the beach) or main rivers, only trenchless techniques can be utilised. Any crossing of the defences (including the beach) will need to be sufficiently deep and account for any future works that may need to be undertaken. Access to the beach and sea defences should not be restricted.

8.3. The report refers to the avoidance of seabanks. Please note, there are offshore sea banks/sandbars that are of benefit to the beach/sea defences, and these should not

be disturbed or removed. Offshore areas need to be carefully selected based on those that contribute to wave breaking/dune sheltering/depth limiting benefits.

8.4. In relation to the landfall location at Anderby, there is an outfall that extends past Mean High Water Springs (MHWS) and towards the sea. Please note that should Anderby Creek be the chosen landfall location, care must be taken to avoid impacting the structure.

8.5. The landfall area is close to where the Environment Agency (EA) buries the sinker line, which is used annually in connection with the Saltfleet to Gibraltar Point beach management (nourishment) scheme for the east coast (typically just south of Anderby around Moggs Eye, but changes can occur to burial location). It is also close to the EA access point for heavy plant and machinery onto the beach. The EA's depot is at Anderby Creek and any disturbance should therefore be avoided here.

8.6. Through lessons learned with other cable landfalls, the MMO have been informed that the EA's land-based works and marine elements cannot co-exist with other cable construction. Therefore, the EA are intending to look to secure a period of time each year to undertake beach and marine area works and if there are delays, total cost recovery from the developer will be sought. In line with other similar schemes, a legal agreement will need to be completed with the EA in respect of this. Marine works include connecting to a dredger offshore with a sinker line that the EA land on the beach to pump the dredgings ashore. The MMO recommend contacting the EA directly to discuss these requirements if necessary.

8.7. The MMO welcomes the inclusion of designated bathing waters as a potential receptor and consideration of this will be included in the assessment. The MMO, in consultation with the EA, would seek to prevent any project works being undertaken within 500 metres of the intertidal area (or within the intertidal area itself) during the Bathing Water season (between 15 May and 30 September inclusive) in any year unless a scheme to protect the current Bathing Water status has demonstrated that the works will not release potential bacteriological concentrations that may be caused by disturbed sediment.

8.8. For information, the EA have informed the MMO that during the Horizontal Directional Drilling (HDD) operations for the Triton Knoll landfall, sinkholes formed on the beach near Anderby Creek. The EA are aware of instances of existing caverns within the chalk, covered with a thin veneer of sediments, which due to, fluctuations in water levels, can collapse into the existing caverns/solution hollows. Some examples include the Dolines of Bronkham Hill, Dorset. It is the EA opinion that drilling operations for Triton Knoll possibly disturbed the overlying sediments and/or hydrology, leading to the formation of this type of sinkhole. The underlying bedrock of the area, like that of Bronkham Hill, is chalk. Therefore, there may also be a need for a geotechnical investigation along the cable route.

The EA has also informed the MMO that they are aware of previous incidents of 'blow out' of bentonite slurry for similar projects when coming ashore; in one case the sands did not provide a stable enough seal to prevent break-out and resulted in drilling mud having to be incorporated on the beach to dry naturally. East Lindsey District Council raised safety concerns because the safety data sheet indicated a chronic carcinogen risk from breathing in dust, and after drying there would be a risk of wind-blown dust generation. Therefore, the EA recommend that it may be prudent to discuss this issue with the Council.

9. Commercial Fisheries

9.1. The commercial fisheries chapter presents fisheries restrictions that overlap with the project on the inshore/landfall section. There are current and future restrictions that will restrict fishing activity in the offshore regions of the project as well that will have caused displacement of effort causing extensive spatial squeeze in the area. Commercial fisheries on the east coast are facing extensive spatial squeeze, and therefore every effort should be taken to characterise the baseline environment to include data that is not publicly available and can be attained directly from commercial fishing business in the region or gear scout/effort surveys.

9.2. The MMO recommends that the appointment of a knowledgeable Fisheries Liaison Officer (FLO) with local expertise is essential to ensure minimum disruption to commercial fishing activities.

10. Navigation

10.1. The project scoping area includes a significant amount of other marine users, for example, offshore windfarms, oil and gas installations, dredging sites, ports, and crossing interconnector cables. The area also carries a significant amount of through traffic to major ports, with a number of important international shipping routes in close proximity. Therefore, attention needs to be paid to changes in vessel routing, particularly in heavy weather ensuring shipping can continue to make safe passage without large-scale deviations, and any reduction in navigable depth referenced to chart datum.

10.2. The MMO notes the commitment in Chapter 11 Shipping and Navigation to complete a Navigation Risk Assessment (NRA) with supporting marine traffic surveys to establish how the phases of the project are managed to a point where risk is reduced and considered to be 'as low as reasonably practicable.' (ALARP), which is welcomed. A marine hazard identification workshop would also be welcomed by the Maritime Coastguard Agency (MCA), as part of the NRA, including local ports and harbours.

10.3. A range of potential project impacts on shipping and navigation have been identified which could occur during the construction, operation, and

decommissioning phases of the project, and the assessment will follow the IMO Formal Safety Assessment methodology. The MMO, in consultation with MCA, would expect the MEAp report to detail the possible impact on navigational issues for both commercial, fishing and recreational craft, specifically:

- Collision Risk
- Navigational Safety
- Risk Management and Emergency response
- Marking and lighting of site and information to mariners
- Effect on small craft navigational and communication equipment
- The risk to drifting recreational craft in adverse weather or tidal conditions
- The likely squeeze of small craft into the routes of larger commercial vessel.

10.4. The MMO, in consultation with the MCA, notes the potential for a reduction of under keel clearance (UKC), which will be scoped into the assessment. Safe realistic UKC assessment should be undertaken for the maximum drafts of vessel both observed and anticipated. Please note, the MMO's Under Keel Clearance Policy paper can be found at the following link: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/373456/Under_Keel_Clearance_paper_May_14_-_FINAL.pdf

10.5. Attention should be paid to cabling routes and burial depth for which a Burial Protection Index study should be completed. Please also note, subject to the traffic volumes, an anchor penetration study may be necessary. The MMO notes the intention to complete a CBRA, the results of which will determine the final target burial depth and will be used to inform the MEAp.

10.6. If cable protection measures are required e.g., rock bags or concrete mattresses, the MMO, in consultation with MCA, would be willing to consider a 5% reduction in surrounding depths referenced to Chart Datum. However, this is subject to further consultation at the Marine Licence Application stage. This will be particularly relevant where depths are decreasing towards shore, and at cable crossings, and potential impacts on navigable water increase. Where this is not achievable, the requirement for this must be discussed further. The MMO notes in the report that as the design progresses, further assessments will be undertaken to assess the subsea cables protection against shipping and fishing activities. Rock protection could potentially be utilised to cover the cable pending assessment from marine traffic and the NRA.

10.7. A study should be undertaken to establish the electromagnetic deviation, affecting ship compasses and other navigating systems, of the high voltage cable route to the satisfaction of the MMO, in consultation with the MCA. On receipt of the study, the MMO reserves the right to request a deviation survey of the cable route post installation. We note this has been scoped in for the operational phase of the project, which is welcomed.

11. Archaeology

11.1. An archaeological desk-based assessment should be commissioned from an appropriate and experienced marine archaeological contractor working to recognised professional standards, such as those defined by the Chartered Institute for Archaeologists. This is essential to qualify any material or features of historic environment interest revealed by geophysical or geotechnical surveys and create a comprehensive baseline for these areas.

11.2. The MEAp should therefore set out further guidance documents it will follow on the assets of survey data, such as the Historic England Deposit Modelling and Archaeology Guidance for Mapping Buried Deposits. There should also be clearer indications within guidance sections which apply to English waters, and which to Scottish waters.

11.3. Furthermore, with regards to the collection of geoarchaeological data, it is important there is a method statement for retention, storage and stage 1 and 2 assessments in place, which contains clear objectives in line with relevant research frameworks. Additionally, the MMO, in consultation with Historic England (HE), notes that Section 14.2 of the report 'Data sources' references the UK Hydrographic Office (UKHO), National Record of the Historic Environment (NRHE) and local Historic Environment Record (HER) for publicly available data. However, the description of data within the NRHE only covers the designated heritage assets, which are contained within the National Heritage List for England (NHLE). This should also include the description for the undesignated heritage assets held within the NHRE. Furthermore, consideration of the NRHE undesignated heritage asset data should be included within any baseline characterisation within the MEAp.

11.4. The proposed assessment methodology, as presented in Section 14.5, should also consider further guidance relevant to determining the value of maritime, aviation and seabed prehistory. This would be beneficial to the assessment of sensitivity.

11.5. The MMO, in consultation with HE, notes from Section 14.5.2 of the report 'Mitigation' that known receptors will be avoided through the application of Archaeological Exclusion Zones (AEZs), Temporary Archaeological Exclusion Zones (TAEZs) and subsequent micro-siting of infrastructure on the seabed, as necessary. Also, we understand that unavoidable impacts to potential receptors will be addressed through agreed mitigation measures, and that these measures will be set out in a project-specific Written Scheme of Investigation (WSI). Based on the information presented, these seem sensible and should be further developed as the desk-based assessment and site specific geophysical and geoarchaeological assessments are completed. Further, the MMO, in consultation with HE, request the need for any archaeological reports produced as a part of this development to be recorded via OASIS V (Online AccesS to the Index of archaeological InvestigationS).

Conclusion

This response is provided incorporating the best available evidence to us at this time, and without prejudice and is therefore not a pre-determination of any advice that may be given at any other point of the pre-application or future marine licence application process. As we have provided a formal response to this enquiry, the MMO considers the purpose of the enquiry to have been completed and is content to close it down. Please notify us within 14 days of the date of this letter if you wish for the enquiry to remain open.

Your feedback

We are committed to providing excellent customer service and continually improving our standards and we would be delighted to know what you thought of the service you have received from us. Please help us by taking a few minutes to complete the following short survey (https://www.surveymonkey.com/r/MMOMLcustomer).

If you require any further information, please do not hesitate to contact me using the details provided below.

Yours Sincerely,

[redacted]

Amelia Clarke
Marine Licensing Case Officer

D [redacted]
E [redacted]

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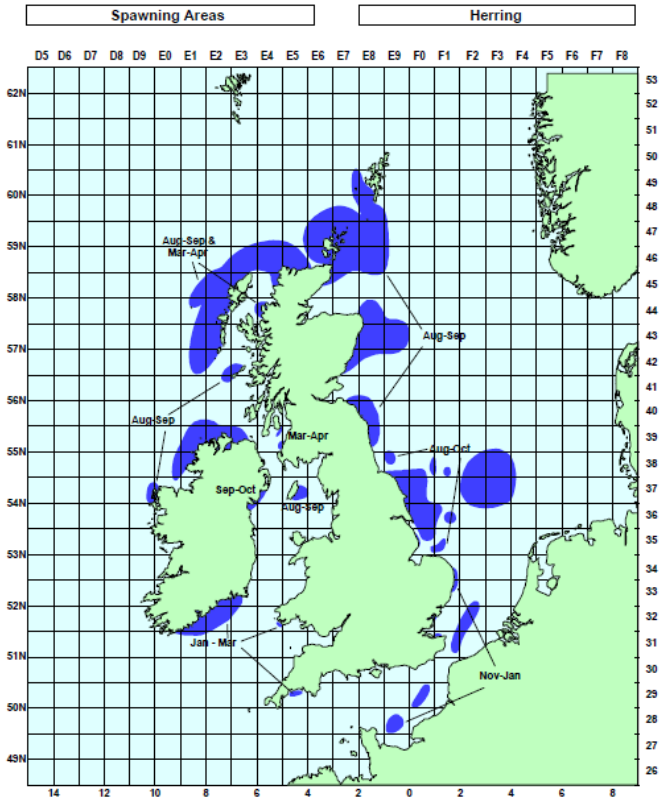
Annex 1 – Map of Historic Herring Spawning Grounds



Historic Spawning Grounds taken from Coull *et. al* (1998)

Annex 2 – Natural England Advice related to Scoping Requirements

1. General Principles

Schedule 4 of the Town & Country Planning (Environmental Impact Assessment) Regulations 2017 / Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (Regulation 10) sets out the necessary information to assess impacts on the natural environment to be included in an Environmental Statement (ES), specifically:

- A description of the development – including physical characteristics and the full marine use requirements of the site during construction and operational phases.
- Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.
- An assessment of alternatives and clear reasoning as to why the preferred option has been chosen.
- A description of the aspects of the environment likely to be significantly affected by the development, including population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape/seascape, and the interrelationship between the above factors.
- A description of the likely significant effects of the development on the environment – this should cover direct effects but also any indirect, secondary, cumulative, short, medium, and long term, permanent and temporary, positive, and negative effects.
- Effects should relate to the existence of the development, the use of natural resources and the emissions from pollutants. This should also include a description of the forecasting methods to predict the likely effects on the environment.
- A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.
- A non-technical summary of the information.
- An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.

It will be important for any assessment to consider the potential cumulative effects of this proposal, including all supporting infrastructure, with other similar proposals and a thorough assessment of the 'in combination' effects of the proposed development with any existing developments and current applications. A full consideration of the implications of the whole scheme should be included in the ES. All supporting infrastructure and activities should be included within the assessment.

Natural England's advice on the scope and content of the Environmental Statement is given in accordance with the National Infrastructure Planning Advice Notes: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/

2. Biodiversity and Geology

2.1. Ecological Aspects of an Environmental Statement

Natural England advises that the potential impact of the proposal upon features of nature conservation interest and opportunities for habitat creation/enhancement should be included within this assessment in accordance with appropriate guidance on such matters. Guidelines for Ecological Impact Assessment (EcIA) have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM) and are available on their website.

EcIA is the process of identifying, quantifying, and evaluating the potential impacts of defined actions on ecosystems or their components. EcIA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal.

The National Planning Policy Framework (NPPF) sets out guidance on how to take account of biodiversity interests in planning decisions and the framework that the responsible authority should provide to assist developers. Further guidance is set out in Planning Practice Guidance on the natural environment.

2.2. Use of EIA Matrices

Natural England notes that the approach to the assessment is proposed to align with EIA approaches used on other projects. This matrix approach has been used throughout ESs to date to support the assessment of the magnitude and significance of impacts. Natural England notes numerous instances where significance has been presented as a range (i.e., slight, or moderate, or large) and it is nearly always the lower value that has been taken forward. Indeed, to date no offshore windfarm has identified ecological impacts that are assessed as significant in EIA terms, either cumulatively or in-combination which is surprising. In the absence of evidence to support the use of the lower value in a range, Natural England's view is that the higher value should always be assessed in order to ensure that impacts on features are not incorrectly screened out of further assessment. This is in line with the principles of the Rochdale envelope approach.

2.3. Impact Risk Zones

Natural England advises that scoping area should be based on the potential for species to be present within the area, the Impact Risk Zone (IRZ) for designated sites as available on Magic, the ecology, i.e., foraging areas of designated species of sites in proximity to the proposed development area.

2.4. Designated Sites – Special Protection Areas (SPAs) and Special Areas of Conservations (SACs)

The application documents should thoroughly assess the potential for the proposal to affect designated sites. Internationally designated sites (e.g., designated Special Areas of Conservation (SAC) and Special Protection Areas (SPA)) fall within the scope of the Conservation of Habitats and Species Regulations 2017 (as amended). In addition, paragraph 181 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential, or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites. (NB. sites falling within the scope of regulation 8 of the Conservation of Habitats and Species Regulations 2017).

Under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) and Regulation 28 of the Conservation of Offshore Habitats and Species Regulations 2017 (as amended) an appropriate assessment needs to be undertaken in

respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site.

Further information on the special interest features, their conservation objectives, and any relevant conservation advice packages for designated sites is available on Natural England's website https://designatedsites.naturalengland.org.uk/ ; and the JNCC website.

The cable corridor area of search overlaps with the following designated nature conservation sites within 12 nautical miles:

- Greater Wash SPA
- Humber Estuary SPA and RAMSAR
- Saltfleetby to Theddlethorpe Dunes & Gibraltar Point SAC
- The Wash and North Norfolk Coast SAC – supporting habitat for the designated feature Harbour (common) seal (*Phoca vitulina*) only.

Please note: As there is only an area of search for the cable corridor at this stage, we are unable to provide a definitive list of sites and features relevant to the project, but these should be identified and fully considered within the application documents. We note that the EGL 3 environmental survey programme has not yet been undertaken and therefore the possibility of habitats being present within the survey corridor outside of those listed exists.

The application documents should include a full assessment of the direct and indirect effects of the development on the features of special interest within these sites and should identify such mitigation measures as may be required to avoid, minimise, or reduce any adverse significant effects.

Internationally designated site conservation objectives are available on Natural England's internet site: http://publications.naturalengland.org.uk/category/6490068894089216

2.5. Habitats Regulations Assessment

If the proposal outlined within the scoping document has the potential to significantly affect features of the designated sites and the activity is not directly connected to the management of any designated site it should be assessed under regulation 63 the Conservation of Species and Habitats Regulations (2017)/ regulation 28 of the Conservation of Offshore Species and Habitats regulations (2017). Should a Likely Significant Effect on an Internationally designated site be identified or be uncertain, the competent authority (e.g., the Marine Management Organisation or Local Planning Authority or Government Department) may need to prepare an Appropriate Assessment, in addition to consideration of impacts through the Application process.

If during the EIA/Application process the potential for a Likely Significant Effect on the conservation objectives of the sites cannot be ruled out the competent authority for the licence/consent (MMO / Government Department/LPA) should undertake an Appropriate Assessment of the implications for the site in view of its conservation objectives. Noting recent case law (People Over Wind3) measures intended to avoid and/or reduce the likely harmful effects on an internationally designated sites cannot be taken into account when determining whether or not a plan or project is likely to have a significant effect on a site, therefore consideration is required at Appropriate Assessment. Natural England wishes to be consulted on the scope of the Habitats Regulations Assessment and the information that

will be produced to support it and should be formally consulted on any Appropriate Assessment provided for the proposal (Regulation 63/28).

The consideration of Likely Significant Effects should include any functionally linked habitat outside the designated site. These areas may provide important habitat for mobile species populations that are qualifying features of the site, for example birds and bats. This can also include areas which have a critical function to a habitat feature within a designated site, for example by being linked hydrologically or geomorphologically. Further guidance is set out in Planning Practice Guidance on appropriate assessment here: https://www.gov.uk/guidance/appropriate-assessment

Further information on the special interest features, their conservation objectives, and any relevant conservation advice packages for designated sites is available on Natural England's website https://designatedsites.naturalengland.org.uk/; and the Joint Nature Conservation Committee (JNCC) website About Marine Protected Areas | JNCC - Adviser to Government on Nature Conservation.

2.6. Marine Conservation Zones (MCZs)

Highly Protected Marine Areas (HPMAs) and Sites of Special Scientific Interest (SSSI) Marine Conservation Zones (MCZs) Marine Conservation Zones are areas that protect a range of nationally important, rare, or threatened habitats and species. You can see where MCZs are located and their special interest features on www.magic.gov.uk . Factsheets that establish the purpose of designation and conservation objectives for each of the MCZ's are available at https://www.gov.uk/government/collections/marine-conservation-zone-designations-inengland

The red line boundary of the Project is within or adjacent to the following MCZ within 12 nautical miles:

- Holderness Offshore MCZ

The application should consider including information on the impacts of this development on MCZ interest features, to inform the assessment of impacts on habitats and species of principle importance for this location. Further information on MCZs is available via the following link: http://publications.naturalengland.org.uk/category/1723382

Further information on the special interest features, the conservation objectives, and relevant conservation advice packages for designated sites is available on our website https://designatedsites.naturalengland.org.uk/

Please note: As there is only an area of search for the cable corridor at this stage, we are unable to provide a definitive list of sites and features relevant to the project, but these should be identified and fully considered within the application documents. We note that the EGL 3 environmental survey programme has not yet been undertaken and therefore the possibility of habitats being present within the survey corridor outside of those listed exists.

Highly Protected Marine Areas (HPMAs)

The red line boundary of the Project does not fall within or adjacent to any HPMA.

Further information on the location of existing HPMAs can be found at Highly Protected Marine Areas (HPMAs) - GOV.UK (www.gov.uk). The MEA should include a full assessment

of the direct and indirect effects of the development on the features of any HPMA and should identify such mitigation measures as may be required in order to avoid, minimise, or reduce any adverse significant effects.

Sites of Special Scientific Interest (SSSIs)

Further information on the location of SSSIs and their special interest features can be found at www.magic.gov.uk . The application should include a full assessment of the direct and indirect effects of the development on the features of special scientific interest and should identify such mitigation measures as may be required in order to avoid, minimise, or reduce any adverse significant effects.

The red line boundary of the Project is within or adjacent to the following SSSIs:

- Saltfleetby – Theddlethorpe Dunes SSSI
- Chapel Point to Wolla Bank SSSI
- The Lagoons SSSI
- Humber Estuary SSSI
- Sea Bank Clay Pits SSSI

Please note: As there is only an area of search for the cable corridor at this stage, we are unable to provide a definitive list of sites and features relevant to the project, but these should be identified and fully considered within the application documents. We note that the EGL 3 environmental survey programme has not yet been undertaken and therefore the possibility of habitats being present within the survey corridor outside of those listed exists.

2.7. Protected Species - Species protected by the Wildlife and Countryside Act 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2017 (as amended)

The Application should assess the impact of all phases of the proposal on protected species (including, for example, pinnipeds (seals), cetaceans (including dolphins, porpoises, and whales), fish (including seahorses, sharks, and skates), marine turtles, birds, marine invertebrates, bats, etc.). Information on the relevant legislation protecting these species can be reviewed on the following link https://www.gov.uk/government/publications/protected-marine-species. Natural England does not hold comprehensive information regarding the locations of species protected by law but advises on the procedures and legislation relevant to such species. Records of protected species should be sought from appropriate local biological record centres, nature conservation organisations, NBN Atlas, groups, and individuals; and consideration should be given to the wider context of the site for example in terms of habitat linkages and protected species populations in the wider area, to assist in the impact assessment.

The conservation of species protected by law is explained in Part IV and Annex A of Government Circular 06/2005 Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System. The area likely to be affected by the proposal should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES.

In order to provide this information, there may be a requirement for a survey at a particular time of year. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and where necessary, licensed, consultants.

2.8. Habitats and Species of Principal Importance

The Application should thoroughly assess the impact of the proposals on habitats and/or species listed as 'Habitats and Species of Principal Importance' within the England Biodiversity List, published under the requirements of S41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the NERC Act 2006 places a general duty on all public authorities, including local planning authorities, to conserve and enhance biodiversity. Further information on this duty is available here https://www.gov.uk/guidance/biodiversity-duty-public-authority-duty-to-have-regard-to-conserving-biodiversity .

Government Circular 06/2005 states that Biodiversity Action Plan (BAP) species and habitats, 'are capable of being a material consideration in the making of planning decisions. Natural England therefore advises that survey, impact assessment and mitigation proposals for Habitats and Species of Principal Importance should be included in the application. Consideration should also be given to those species and habitats included in the relevant Local BAP.

3. Nationally Designated Landscapes

Consideration should be given to any potential direct or indirect impacts to designated landscapes.

Please note: As there is only an area of search for the cable corridor at this stage, we are unable to provide definitive advice on specific designated landscapes at this time. However, we note that the settings of the Lincolnshire Wolds National Landscape may require further consideration once the final cable corridor is confirmed.

4. Water Quality

Increases in suspended sediment concentrations (SSC) during construction and operation (e.g., future dredging works) have the potential to smother sensitive habitats. The Application should include information on the sediment quality and potential for any effects on water quality through suspension of contaminated sediments. The EIA/Application should also consider whether increased suspended sediment concentrations resulting are likely to impact upon the interest features and supporting habitats of the designated sites as listed above.

The Application should consider whether there will be an increase in the pollution risk as a result of the construction or operation of the development.

For activities in the marine environment up to 1 nautical mile out at sea, a Water Framework Directive (WFD) assessment is required as part of any application. The Application should draw upon and report on the WFD assessment considering the impact the proposed activity may have on the immediate water body and any linked water bodies. Further guidance on WFD assessments is available here: https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters

5. Air Quality

Air quality in the UK has improved over recent decades but air pollution remains a significant issue; for example, over 97% of sensitive habitat area in England is predicted to exceed the Page 11 of 17 critical loads for ecosystem protection from atmospheric nitrogen deposition (England Biodiversity Strategy, Defra 2011). A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The planning system plays a key role in determining the location of developments which may give rise to pollution, either directly or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water, and land. The assessment should take account of the risks of air pollution and how these can be managed or reduced. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System (www.apis.ac.uk). Further information on air pollution modelling and assessment can be found on the Environment Agency website.

6. Climate Change Adaptation

The England Biodiversity Strategy published by Defra establishes principles for the consideration of biodiversity and the effects of climate change. The Application should reflect these principles and identify how the development's effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained. The NPF requires that the planning system should contribute to the enhancement of the natural environment by establishing coherent ecological networks that are more resilient to current and future pressures which should be demonstrated through the Application. Further information is available from the Committee on Climate Change's (CCC) Independent Assessment of UK Climate Risk, the National Adaptation Programme (NAP), the Climate Change Impacts Report Cards (biodiversity, infrastructure, water etc.) and the UKCP18 climate projections.

7. Contribution to Local Environmental Initiatives and Priorities

Due to the lack of detail available at this stage, Natural England is unable to provide any information on how this development fits with local initiatives and priorities such as the delivery of green/blue infrastructure, biodiversity opportunity areas or biodiversity enhancements.

8. Cumulative and In-combination Effects

It will be important for any assessment to consider the potential cumulative effects of this proposal, including all supporting infrastructure, with other similar proposals and a thorough assessment of the 'in combination' effects of the proposed development with any existing developments and current applications. A full consideration of the implications of the whole scheme should be included in the Application. All supporting infrastructure and activities should be included within the assessment.

The Application should include an impact assessment to identify, describe and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment, (subject to available information):

- existing completed projects.
- approved but uncompleted projects.
- ongoing activities.

- plans or projects for which an application has been made and which are under consideration by the consenting authorities; and
- plans and projects which are reasonably foreseeable, i.e., projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

Natural England's advice on the scope and content of an Environmental Statement is given in accordance with the National Infrastructure Planning Advice Notes: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/ . We advise that all Applications use this as a template.

9. Use of the Rochdale Envelope

Natural England recognises the need to use a Rochdale Envelope approach to allow flexibility in project design to ensure that changes in available technologies and project economics can be considered post consent. However, Natural England has concerns over the extent to which uncertainty in ground conditions is driving the extent of the project envelope, and that the Rochdale Envelope approach is resulting in the provision of insufficient baseline information to inform both project design and assessment of impacts. The lack of understanding of the ground conditions results in the use of Maximum Design Scenarios (MDSs) that are conservative enough to make up for that lack of understanding and allow for all eventualities. This in turn translates into a vast number of variables, causing difficulties in assessment, as it is difficult to identify and assess a realistic worst-case scenario for each of the relevant receptors with any certainty, which in turn necessitates precautionary assessments given this uncertainty. That presents challenges when it comes to identifying appropriate mitigation measures.

10. Ecological Join up Between Marine Receptor Assessments

Natural England advises that changes to marine processes and benthic ecology could cause an indirect impact on mobile interest features from designated sites through changes to supporting habitats and prey availability. Ecosystem impacts should be thoroughly considered within the relevant receptor chapters throughout the Application documents.

11. Landfall

Coastal environments are subject considerable historic and future change. Therefore, should trenchless techniques be considered then a feasibility study informed by geotechnical investigations will be required at the time of consent, particularly within the boundary of a designated site. We would also advise that the Applicant should consider how the coast may alter throughout the lifetime of the project, both in terms of vertical change in beach profile and coastal retreat. In other words, how will cable burial and siting of infrastructure be managed throughout the lifespan of the project? We advise that the landfall assessment needs to consider the effects on the hydrodynamic regime due to the presence of cable protection, equipment such as jack-up rigs, cable-laying vessels, and cofferdams etc. Plus, potential impact of intertidal access and/or vehicle traffic on foreshore profile change or cliff erosion over all phases of the project.

12. Cable protection – Including Secondary Scour

In addition, Natural England's position provided for Hornsea Project Three, Norfolk Vanguard and Norfolk Boreas in relation to Adverse Effects on Integrity from the placement of cable protection remains unchanged and therefore cable protection within benthic marine protected areas should be avoided and where that is not possible every effort should be made to mitigate the impacts. To achieve this, we advise that a cable burial risk assessment is undertaken as part of the application process informed by comprehensive geotechnical and geophysical surveys. If cable protection is required options that have the greatest success of removal with least impact to interest features should be taken forward. A site integrity plan could then be used to determine the risk to the conservation objectives for the site and determine the requirements for any compensation measures.

Please note that impacts from secondary scouring around cable protection should also be factored into both marine processes and benthic assessment.

13. Marine Mammals Impact Assessments

If not already considered, we advise Applicants to include reference to the following:

• IAMMWG. 2022. Updated abundance estimates for cetacean Management Units in UK waters (Revised 2022) https://hub.jncc.gov.uk/assets/3a401204-aa46-43c8-85b8-5ae42cdd7ff3

• Scientific Advice on Matters Related to the Management of Seal Populations: 2021 http://www.smru.st-andrews.ac.uk/files/2022/08/SCOS-2021.pdf

• Carter et al. (2022) https://www.frontiersin.org/articles/10.3389/fmars.2022.875869/ful

14. Red-Throated Divers

Natural England highlights our increasing concerns in relation to disturbance and/or displacement of red-throated divers features from the more persistent presence of offshore wind farm and oil and gas related vessel activity which could make a meaningful contribution to in-combination effects to the Greater Wash SPA and indeed the adjacent Outer Thames Estuary SPA depending on the transit route. As such, we advise appropriate consideration of both seasonal timing of construction and O&M works, and vessel transit route is included within the Application.

Natural England recommends that where possible, any construction and O&M activities avoid the months of November to March inclusive. Vessel transit routes outside of existing navigation routes through the Greater Wash SPA and Outer Thames Estuary, depending on the port of origin, should also be avoided during these winter months. Natural England advises as minimum use of best practice measures between 1st November and 31st March to mitigate and therefore minimise disturbance to red-throated diver namely:

• Selecting routes (when transiting to site) that avoid aggregations of red-throated diver and common scoter, where practicable.

• Restricting (to the extent possible) vessel movements when transiting to the site to existing navigation routes (where the densities of divers are typically relatively low).

• Avoidance of over-revving of engines (to minimise noise disturbance); and

• Briefing of vessel crew on the purpose and implications of these vessel management practices (through, for example, toolbox talks). Although, we do highlight that dependent on

the level of proposed activity across the designated site the best practice protocol as set out above still may not minimise the in-combination impacts to an acceptable level.

15. Outline Plans

Natural England advises that outline documents and/or assessment will need to be included in the Application to ensure that all impacts have been considered and appropriately managed.

Annex 3: Detailed comments received from Natural England on the project-specific aspects of the report

Point No.	Section	Para/Table	Topic	Comments	Recommendations
1.	2.5.4	Final Paragraph	Scoping Boundary	This paragraph states that the longer route option "*avoids the Holderness Offshore MCZ but crosses the northern tip of the Silver Pit glacial tunnel valley feature outside of the site*". Based on the map on Pg. 55, it appears that this route option does pass through a section of the MCZ. The northern tip of the glacial tunnel valley feature that the route crosses is a protected feature within the MCZ.	Please clarify whether the statement or the map is correct and adjust scoping assessment accordingly.
2.	6.4.1.9	Para. 2	Marine Processes	Farnes East MCZ is designated for benthic features for benthic broadscale habitats, ocean quahog and seapen and burrowing megafauna communities. These features have conservation objectives of either maintain or recover to favourable condition. Farnes East MCZ is 6.29km from the cable corridor and therefore within the 15km preliminary search area, so must be considered within the wider English study area for this section. Marine processes and benthic impacts such as sediment deposition are of relevance.	Farnes East MCZ should be screened in for this receptor as a designated site within the wider English Study Area.
3.	6.6	Tab. 6-5	Marine Processes	Impacts of disturbance of subtidal seabed morphology and disturbance of intertidal morphology by decommissioning has been scoped out due to being considered as having an impact of similar or lower magnitude significance of effect as the construction activity. Construction activity for both impacts was scoped in.	Whilst uncertainty remains on decommissioning methods, decommissioning impacts should be scoped in for these impacts.

4.	6.6	Tab. 6-5	Marine Processes	The project has not yet been able to rule out open cut trenching for landfall locations. Therefore, there is potential for the project to cause modifications to tidal and wave regimes and potentially alter sediment transport particularly within the intertidal zone. The Humber Estuary SAC and Saltfleetby to Theddlethorpe Dunes SAC are within the zone of influence for the scoping boundary. Both sites contain	The project should scope in modification to tidal and wave regimes from construction activities within the intertidal zone.
5.	7.6	Tab. 7-6	Benthic and Intertidal Ecology	Temporary increase and deposition of suspended sediments from; boulder clearance, PLGR, pre-sweeping of sand waves; cable burial and trenching; anchoring/jack-up foundations; and deposit of external cable protection with regards broadscale habitats and Annex I *Sabellaria spinulosa* reefs has been scoped out. These habitats, including Annex I *Sabellaria spinulosa* reef, have a medium sensitivity to heavy smothering which the applicant has identified as a likely impact within a 100m corridor of operations.	Natural England recommends these potential impacts continue to be scoped in.
6.	7.6	Tab. 7-6	Benthic and Intertidal Ecology	The impact of temporary habitat loss / seabed disturbance on Subtidal broadscale habitats during construction and operation have been scoped out. Subtidal coarse sediments, sands and mixed sediment are all protected broad-scale features of the Holderness Offshore MCZ which support a wide range of infauna and have 'Recover' conservation objectives. One of the cable route options passes through 21km of the Holderness Offshore MCZ.	Scope in the potential impacts of temporary habitat loss / seabed disturbance during construction and operation on subtidal broadscale habitats.

7.	7.6	Tab 7-6	Benthic and Intertidal Ecology	Impacts from permanent habitat loss through external cable protection on subtidal broadscale habitats has been scoped out. One of the cable route options passes through 21km of the Holderness Offshore MCZ and use of cable protection hinders the 'Recover' conservation objectives of the protected broadscale habitat features.	Scope in the potential impacts of permanent habitat loss through external cable protection on subtidal broadscale habitats during operation.
8.	8.4.2.3	Para.5	Fish and Shellfish	The River Tweed SAC has been screened into the assessment, yet the Tweed Estuary SAC, which is of similar distance away from the scoping boundary, has not been screened into this section. The Tweed Estuary SAC is designated for sea and river lamprey, which was identified in Section 8.4.1.3 of the MEA.	The MMO advises the Tweed Estuary SAC should be screened into the MEA.
9.	9.6	Tab. 9-10	Intertidal and Offshore Ornithology	Impacts of temporary increases and deposition of suspended sediments for all phases of development have been scoped out as an impact for bird species which dive for prey. The scoping document acknowledges an impact pathway but rules out significant impact based on rapidly dissipating sediment plumes and a narrow and relatively small area of impact. The area of search for the cable corridor crosses the Greater Wash SPA and the wider area is potentially considered as foraging habitat for designated sites in the wider region.	We advise that depending on whether or not there will be seasonal restriction for cable installation further assessment of the areas to be impacted due to the risk of localised displacement from preferred feeding grounds and changes to prey availability. This is particularly pertinent for Red Throated Divers. Therefore, this impact should be scoped in where source and receptor pathways exist.

10.	10.4.3.2	N/A	Marine Mammals	Teesmouth and Cleveland Coast SSSI and National Nature Reserve are designated for common/harbour seal (*Phoca vitulina*). Section 10.4.2.3 states the: '*harbour seal foraging area is within 40 – 50 km of their haul out site*.' This population has not been screened into the MEA.	The MMO advises that this population is screened into the MEA.