

The Great Grid Upgrade

Eastern Green Link 5 (EGL 5)

Preliminary Environmental Information Report

Non-Technical Summary of the PEIR

Document Reference: EGL5-NGET-CONS-XX-RP-YL-008

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nationalgrid

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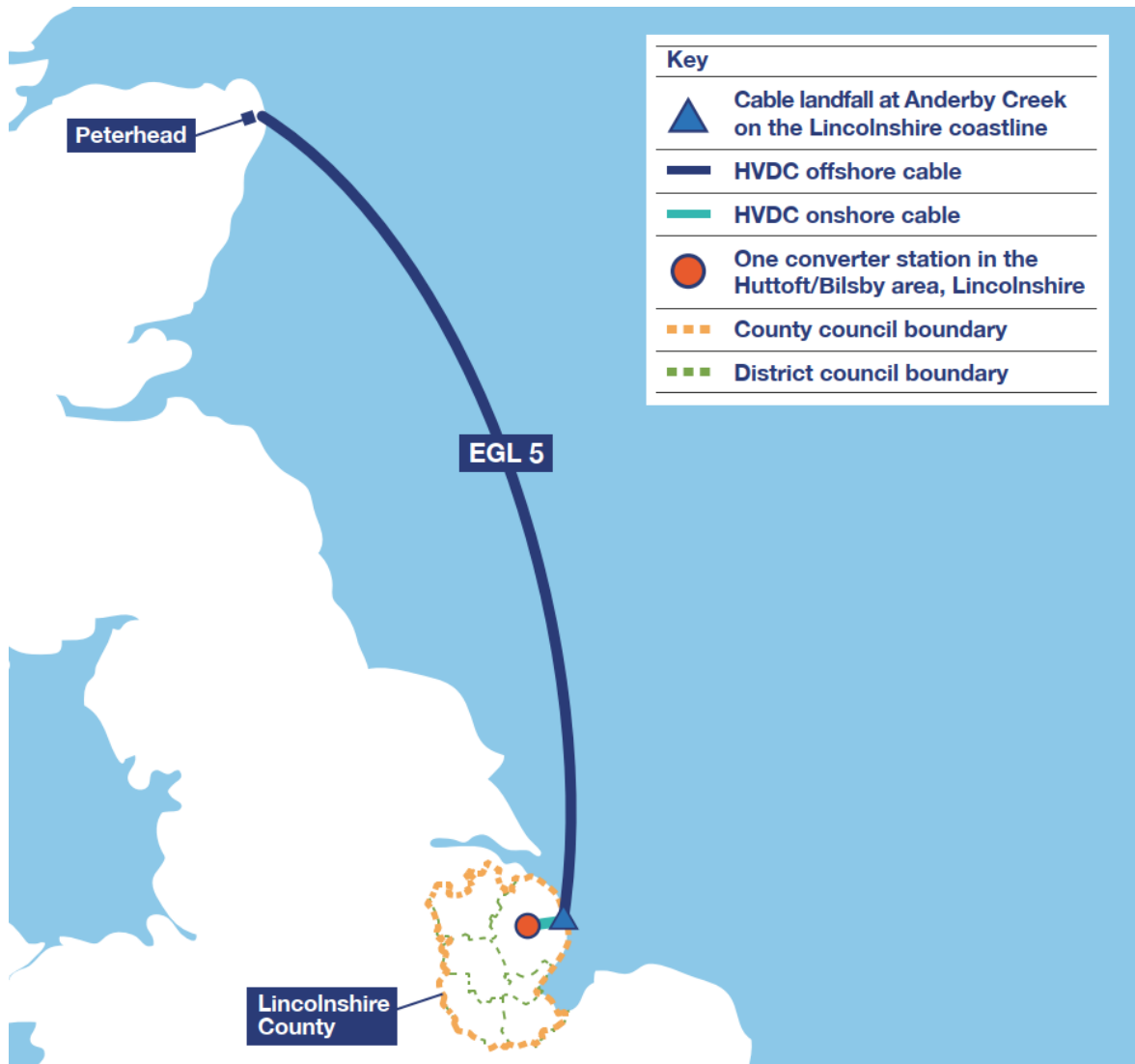
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1. Introduction

1.1 Overview

1.1.1. Eastern Green Link (EGL) 5 is a proposed new electrical connection being developed by National Grid Electricity Transmission plc (referred to in this document as NGET). This Non-Technical Summary (NTS) summarises the information from a preliminary Environmental Impact Assessment (EIA) undertaken to date. More detailed technical information can be found in the Preliminary Environmental Information Report (PEIR). The PEIR is specific to the English components, both onshore and offshore. Therefore, this NTS provides an overview of the main elements of the English Onshore Scheme and English Offshore Scheme (together referred to as 'the Project'). **Plate 1-1** illustrates the location of the Project.

Plate 1-1 Overview of EGL 5



1.2 Purpose of this Non-Technical Summary

- 1.2.1 The aim of this NTS is to enable the local communities and other stakeholders to understand the likely impacts arising from the Project, based on the preliminary information and assessment undertaken to date (and as reported in the PEIR), in a concise manner which is easily understood and accessible by all. Effects are assessed in terms of how ‘significant’ they would be, and the EIA is primarily concerned with ‘likely significant effects’ and not those unlikely to be significant.
- 1.2.1 This NTS includes a description of the Project, a summary of the consultation process and preliminary environmental information relating to the proposed works. **Table 1-1** sets out a summary of each of the sections of this NTS.

Table 1-1 What’s included in the NTS

Section	What it covers
1. Introduction	This Introduction chapter introduces National Grid, what the Project is, where it is located and why the Project is needed.
2. Main Alternatives Considered	This chapter explains the main alternative designs considered to date and provides a summary of how the design has evolved and developed to date.
3. Project Description	This chapter explains how the Project would be built (should it be consented), what new electricity infrastructure would be implemented and how long construction would take.
4. Approach and Methodology	This chapter explains how the preliminary assessment has been undertaken and how it has been informed by consultation and stakeholder engagement to date.
5. Preliminary Environmental Assessment - English Onshore Scheme	This chapter provides a summary of the potential environmental effects identified to date arising from the onshore elements of the Project in Lincolnshire.
6. Preliminary Environmental Assessment - English Offshore Scheme	This chapter provides a summary of the potential environmental effects arising from the offshore elements of the Project which have been identified to date.
7. Project-Wide Effects	This chapter provides a summary of the project wide assessments undertaken for the Project including greenhouse gas and cumulative effects.
8. Next Steps	This chapter explains what happens next in the EIA process, and how you can have your say on the proposals.

- 1.2.2 Defined terms and acronyms are provided within the **PEIR Glossary** (document reference: **EGL5-NGET-CONS-XX-RP-YL-088**).

1.3 Eastern Green Link 5

- 1.3.1 EGL 5 is a proposed 2 Gigawatt (GW) high voltage link being developed to reinforce the electricity transmission system between Scotland and England. The PEIR and this NTS, only consider the components of EGL 5, which fall within England and English Waters. Separate consents are required and will be sought for the Scottish elements of EGL 5 by Scottish and Southern Electricity Networks Transmission (SSEN-T); therefore, they have not been considered within the PEIR or this NTS.
- 1.3.2 The Project spans both marine (offshore) and terrestrial (onshore) environments and have therefore been split into two geographical parts, referred to as the 'English Onshore Scheme' and the 'English Offshore Scheme', collectively termed 'the Project'.
- 1.3.3 Broadly, the infrastructure required to deliver the Project includes High Voltage Direct Current (HVDC) subsea and underground cables, High Voltage Alternating Current (HVAC) underground cables, a new converter station and a new substation, the substation will form part of the NGET Grimsby to Walpole (GtW) Project and therefore will form part of its Development Consent Order (DCO) and is not included as part of the Project. Further details of the Project can be found in Section 3 of this NTS.
- 1.3.4 The English Onshore Scheme would be located within Lincolnshire. Elements of the English Onshore Scheme would be located along the Lincolnshire coast in East Lindsey, at Anderby Creek. From the coastline, the Project would continue for approximately 8 km (new underground HVDC cable) and connect into the EGL 5 converter station in the vicinity of the proposed 400 kV Lincolnshire Connection Substation-B (LCS-B) in East Lindsey (the LCS-B substation is considered as part of the NGET GtW Project). In addition, approximately 1 km of new underground HVAC cable will be required between the EGL 5 converter station and the connection point at the proposed 400kV LCS-B.
- 1.3.5 The English Offshore Scheme would be located within English waters. The most northerly elements of the English Offshore Scheme would be located at the English-Scottish maritime boundary, and the most southerly elements would be located at the Anderby Creek Landfall, along the Lincolnshire coastline.
- 1.3.6 The Project has been designed to increase the capability of the electricity transmission network to carry low carbon and renewable energy from where it is generated to where it is used in homes across the country.

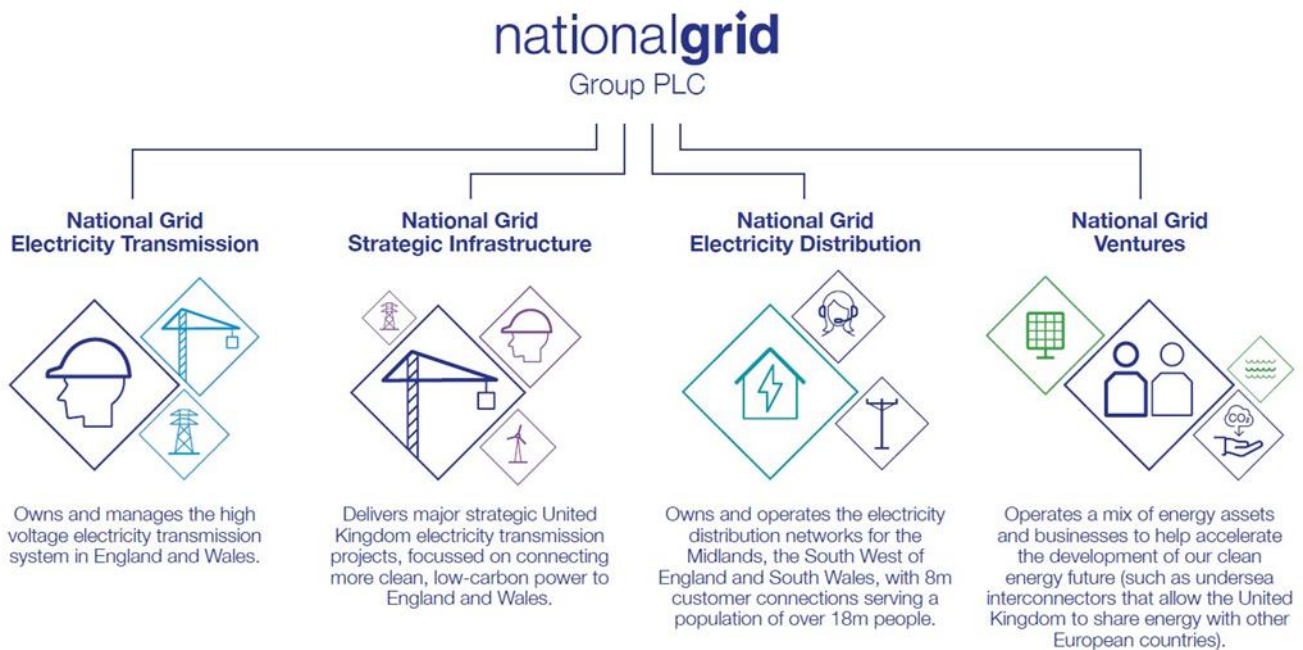
Draft Order Limits

- 1.3.7 The draft Order Limits form the boundary of the area within which the Project could take place, including temporary and permanent works, as well as some works to the existing infrastructure. They represent the maximum extent of land within which the Project may take place, as known at this stage of the Project. However, some third-party elements of the Project could arise later and may need to be consented separately if they fall outside of the draft Order Limits. The draft Order Limits for the Project are shown in **Figure 1-1: Project Location and draft Order Limits**. The English Onshore Scheme draft Order Limits are shown in **Figure 1-2: English Onshore Scheme draft Order Limits**, and the English Offshore Scheme draft Order Limits are shown in **Figure 1-3: English Offshore Scheme draft Order Limits**. **Figures 1-1 to 1-3** are presented in the separate NTS Figures document.

1.4 Who is National Grid?

- 1.4.1 National Grid delivers electricity safely, reliably and efficiently to the customers and communities it serves. The parts of National Grid involved in ensuring everyone has the essential electricity supplies needed are shown in **Plate 1-2** below.
- 1.4.2 NGET, which is part of National Grid Group plc, is the organisation applying for development consent for the Project and owns the high voltage electricity transmission system in England and Wales which transports electricity from generators (such as power stations and wind farms) to local distribution network operators (DNOs). DNOs, such as National Grid Electricity Distribution (NGED) (in south Lincolnshire), are the companies that own and operate the local power lines and infrastructure that deliver electricity to individual properties. National Grid's transmission network does not connect directly to homes, because the voltage at which it transmits electricity is too high for domestic and commercial properties. The structure of National Grid Group plc is shown in **Plate 1-2**.

Plate 1-2 National Grid Group plc structure



1.5 Why is EGL 5 needed?

- 1.5.1 The UK Government is committed by law to reducing greenhouse gas emissions by at least 100% from the emissions produced in 1990 by 2050. This is known as 'Net Zero'. Electricity demand is also forecast to at least double by 2050, increasing the amount of electricity that needs to be transported to homes.
- 1.5.2 As a result, more energy is being generated from renewable sources, such as offshore windfarms, many of which are located off the coast of Scotland, and less energy is being generated using fossil fuels and coal in the north and Midlands of England.
- 1.5.3 Therefore EGL 5 is needed to help strengthen the national electricity transmission network so that:
- The growth in electricity generation, particularly in Scotland, can be transferred from where it's generated to where it is needed; and

- The national electricity transmission network can accommodate the future overall growth in electricity generation and flows.
- 1.5.4 Further studies have identified that in the future, significantly higher flows of electricity will occur in the electricity networks in the north and east of England, including the electricity transmission network between the Scottish-English border and the Midlands. This will put pressure on the existing electricity transmission network and therefore reinforcement of the electricity network in the Humber, East Midlands, East of England and East Anglia areas is necessary to ensure optimal operation of the electricity transmission network and reliable, economic long-term supply of electricity.
- 1.5.5 EGL 5 is needed to ensure the electricity transmission network is fit for the future and is part of ‘The Great Grid Upgrade’: the largest overhaul of the electricity grid in generations. For further details of The Great Grid Upgrade, please visit <https://www.nationalgrid.com/the-great-grid-upgrade>.
- 1.5.6 Without additional reinforcement, the electricity transmission system would become overloaded and there would be a need to constrain power generation. This would involve paying generators to not produce power in one area to reduce congestion around a particular point in the transmission network. Such action could result in significant costs to consumers.
- 1.5.7 Further information about why EGL 5 is needed, including details of the technical studies supporting this, can be found in **Volume 1, Part 1, Chapter 1: Introduction**.

1.6 The consenting process for EGL 5

- 1.6.1 The Planning Act (2008) (PA2008) (Ref 1.1) created a new development consent regime for major infrastructure projects, known as Nationally Significant Infrastructure Projects (NSIP), in the fields of energy, transport, water, wastewater, and waste. When these types of developments meet the threshold described in PA2008, they need a Development Consent Order (DCO) before they can be built. As this type of development is nationally important, consent for a project needs to be given by the government rather than the local planning authority. The PA2008 process was introduced to streamline the decision-making process for major infrastructure projects, making it fairer and faster for communities and applicants alike. NSIP applications are handled by the Planning Inspectorate on behalf of the relevant Secretary of State (SoS).
- 1.6.2 NGET sought direction from the SoS for the Project and submitted a Section 35 application, as defined by PA2008. The converter station element of the Project would be an authorised development under a DCO and should therefore be treated as a NSIP. This decision was granted by the SoS on the 14 May 2025.
- 1.6.3 A DCO is a statutory order which allows the applicant to build their proposed development. It is like a planning permission but can also include other types of consent, such as marine licences, a form of consent granted for certain activities within the marine environment. As part of the DCO application for the Project, a Deemed Marine Licence will be sought for the Project.
- 1.6.4 Under the PA2008 process, NGET is legally required to consult with relevant organisations and the public on the Project. The PEIR forms one of the documents that NGET will be consulting on. The purpose of the PEIR is to provide early information to allow stakeholders and the local community to develop an informed view of the impacts of the Project. This process involves identifying potential likely significant adverse impacts resulting

from the Project, allowing them to be avoided or minimised where possible, as well as identifying any potential beneficial environmental impacts.

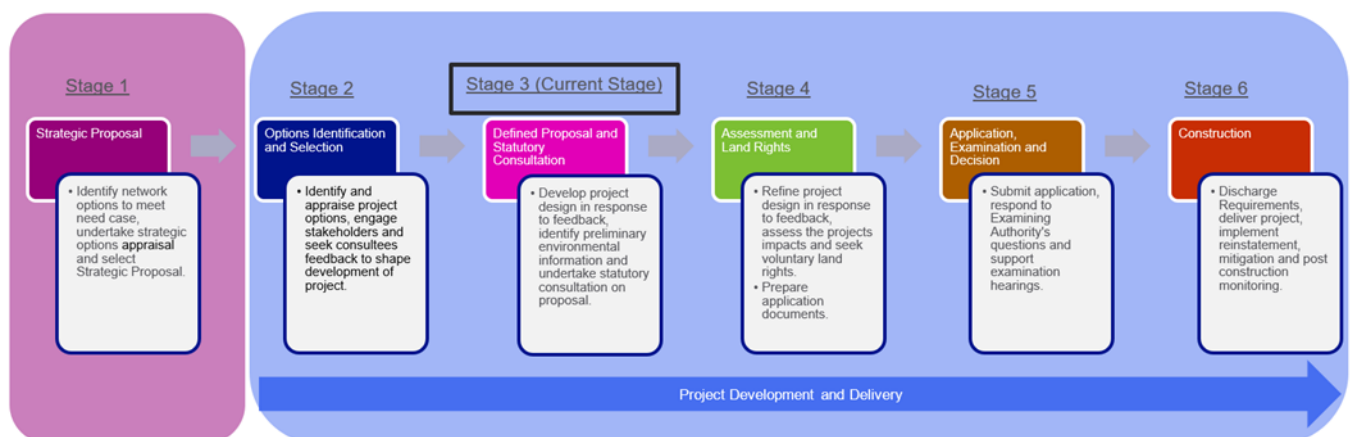
- 1.6.5 The DCO application for the Project will be submitted by NGET in 2027. The application will provide details of the Project and will be accompanied by an Environmental Statement (ES). A single DCO application covering the Project will be made.
- 1.6.6 Once NGET has submitted the application for a DCO, the Planning Inspectorate will first decide whether to accept the application for Examination. If accepted for Examination, the Planning Inspectorate will appoint an independent Inspector or panel of Inspectors (known as the Examining Authority) to examine the application on behalf of the SoS. The Examination is a public process in which interested parties can participate.
- 1.6.7 Following the examination, the Examining Authority will make a recommendation to the SoS as to whether consent should be granted. The SoS will decide whether a DCO should be granted. The timescale between acceptance of the submission and a decision is approximately 18 months.

2. Reasonable Alternatives Considered

2.1 Introduction

- 2.1.1 The legal regulations on EIA require ‘reasonable’ alternatives of the proposed development to be considered. These alternatives can relate to the location of a proposed development as well as its layout, size, scale and technology used. The main reasons for selecting the preferred design, location and layout should be included in the ES. Further information on the EIA process is set out in Section 5 of this NTS.
- 2.1.2 NGET’s approach to considering alternatives is included as part of its publication ‘Our Approach to Consenting’ (Ref 2.1). This document sets out the key stages NGET takes to gaining consent for a proposed development and, as part of these stages, the approach to considering reasonable alternatives. The key stages of this process are shown in **Plate 2-1**.

Plate 2-1 NGET's Approach to Project Development and Delivery



- 2.1.3 The options appraisal process compares options and assesses the positive and adverse effects of alternative options against a wide range of criteria, including how each option could impact the environment and people, technical complexity, the costs involved and how long it could take to implement or build each option, where relevant. The process also accounts for NGET’s legal duties. Each stage of the process follows a defined methodology and the reasons why a particular option is preferred are stated.

2.2 Strategic proposal alternatives (Stage 1)

- 2.2.1 As outlined in Section 1.5, studies showed that reinforcement of the electricity network was required in the Humber, East Midlands, East of England and East Anglia areas. The National Energy System Operator (NESO, formerly known as the Electricity System Operator (ESO)) recommended multiple East Coast onshore and offshore reinforcements, which has now been refined to a new 2 GW HVDC link between Scotland and England, known as EGL 5.
- 2.2.2 Potential strategic options were identified to meet the need case for EGL 5 and appraised at a strategic level. These appraisals considered the likely environmental and socio-

economic effects, technical issues, and costs that would be associated with each strategic option.

- 2.2.3 The assessment concluded that EGL 5 could be connected near to a Main Interconnected Transmission System Substation (identified as one of the two proposed new substations, named as Lincolnshire Connection Station (LCS) A and B). The new LCS are proposed to be consented and developed as part of the NGET GtW Project. The GtW Project is being developed by NGET to reinforce the electricity transmission system to help deliver the UK Government's Net Zero targets. It forms part of a major programme of reinforcement of the electricity transmission system to accommodate substantial increases in north-south power flows. As part of the GtW Project, two new 400 kV substations are proposed in East Lindsey, one of which (LCS-B) is to be located northeast of Bilsby.
- 2.2.4 As well as the connection location, the appraisal of strategic options also looked at where the offshore cables would come onto the land (referred to as Landfall).
- 2.2.5 Further information on the strategic optioneering process can be found on the National Grid website and **Volume 1, Part 1, Chapter 3: Reasonable Alternatives Considered** of the EGL 5 PEIR.

2.3 Options Identification and Selection (Stage 2)

- 2.3.1 Once the Landfall location and strategic option were decided, the following stage “Options Identification and Selection” (see **Plate 2-1**) looked at alternatives for the different locations of the Project infrastructure, such as alternatives for the cable routes as well as the converter station.

English Onshore Scheme

- 2.3.2 The output of Stage 2 of NGET’s approach to consenting (**Plate 2-1**) for different onshore options was reported in the Corridor and Preliminary Routing and Siting Study (the ‘CPRSS’) (Ref 2.2).
- 2.3.3 This report followed a step-by-step approach, undertaken in line with NGET’s Approach to Consenting (Ref 2.1), comprising:
- Step 1: Defining the study areas;
 - Step 2: Scope of Environmental Topics and Baseline Data Gathering;
 - Step 3: Ascribe a weight to confirm and ‘Heat Map’ Features;
 - Steps 4 - 6: Identifying and Defining Corridors, Siting Zones or Siting Areas and Landfall Appraisal; and
 - Step 7 - 8: Options Appraisal and Selection of Preferred Options.
- 2.3.4 A Stage 1 non-statutory public consultation was held between 13 May 2025 to 23 June 2025. This consultation introduced the Project, explained how NGET had developed its proposal through the eight steps listed above, and invited feedback from the public and stakeholders.
- 2.3.5 At Stage 1 non-statutory consultation NGET consulted on the preferred corridor, preferred converter station Siting Zones and associated assessment area from Anderby Creek Landfall to the proposed 400 kV LCS-B of the GtW Project.
- 2.3.6 In summary, the emerging preferred Landfall, Siting Zones and Corridors were as follows:

- **Landfall** – Anderby Creek was identified as the preferred Landfall location over Theddlethorpe. Anderby Creek offers the best opportunity for Landfall installation particularly from an ecological perspective and it poses fewer onshore engineering constraints.
- **Connection between the Landfall and LCS-B** – the connection routes between Anderby Creek and the proposed 400 kV LCS-B, via a new EGL 5 converter station.
- **New EGL 5 converter station** – the areas identified as most suitable for the EGL 5 converter station were the EGL 5 West converter station (CS05) and EGL 5 East converter station (CS06). Siting Zone CS05 offers the best opportunity to limit potential landscape and visual effects in combination by aiming to co-locate infrastructure near the proposed 400 kV LCS-B (proposed as part of the GtW Project).

English Offshore Scheme

2.3.7 The output of Stage 2 for the English Offshore Scheme was reported in the English Marine Options Appraisal. This report followed a staged approach, undertaken in line with National Grid's Approach to Consenting, comprising:

- Step 1: Confirm the study areas;
- Step 2: Scope of Environmental Topics and Data Gathering;
- Step 3: Ascribe a weight to constraints;
- Step 4: Define Marine Route Alignments; and
- Step 5: Options Appraisal and Selection of Preferred Marine Route.

2.3.8 The report considered the following:

- Two landfall options – Theddlethorpe and Anderby Creek;
- Six nearshore route options – ENG Route A – ENG Route F;
- One offshore route option – Offshore Route A;
- Three offshore route options approaching the Scottish marine border – Scot A – Scot C.

2.3.9 The report was also part of the Stage 1 non-statutory public consultation which invited feedback from the public and stakeholders.

2.3.10 The results of the English Marine Options Appraisal and Stage 1 non-statutory consultation led to the following emerging preferences that were taken forward to the next stage:

- Landfall - Anderby Creek;
- Nearshore – ENG Route A and B; and
- Offshore (approaching the Scottish border) – Scot B.

2.4 Design Development and Evolution of the Project from Non-Statutory Consultation

2.4.1 The feedback received during the Stage 1 non-statutory consultation has been carefully reviewed and considered, informing the ongoing technical work on the design and the

EIA process. Since the Stage 1 non-statutory consultation, the following key changes to the design have been made:

- Converter station Siting Zone CS05 was selected as the preferred converter station Siting Zone. This has been driven by; the location and connection to the LCS-B, existing utilities constraints, existing environmental conditions and opportunities such as, places to site temporary and permanent access, drainage features and environmental mitigation.
- Addition of two potential construction routes from the public highway to the areas for installing the underground cable and construction of the converter station.
- The two route options (ENG Route A and ENG Route B) for the English Offshore Scheme through the Holderness Offshore Marine Conservation Zone (MCZ) has been reduced to one. ENG Route B has been taken forward as it was a shorter route through the MCZ and minimises potential impacts to features of the MCZ.
- A minor change was made to ENG Route B to route around the proposed Outer Dowsing Offshore Wind Farm (OWF) Artificial Nesting Structure (ANS).

2.4.2 In addition, the design of the English Onshore Scheme has been developed to include more detail, such as access and highway modification, utility modifications, land drainage and diversions and compounds for the construction works. For the English Offshore Scheme, the cable routes have also been considered in more detail. Further information on the development of the Project's design since Stage 1 non-statutory consultation can be found in **Volume 1, Part 1, Chapter 3: Reasonable Alternatives Considered** of the PEIR.

2.4.3 The Project and the draft Order Limits upon which the preliminary assessments have been undertaken are described in Section 3 of this NTS.

2.4.4 Consultation feedback received during statutory consultation will be reviewed and changes to the design of the Project considered to address the concerns and issues raised through the feedback.

3. Project Description

3.1 English Onshore Scheme: Permanent infrastructure

3.1.1 The EGL 5 English Onshore Scheme would comprise the construction of:

- A new converter station, in the vicinity of the proposed 400 kV LCS-B, in East Lindsey;
- A Transition Joint Bay (TJB) connecting the offshore and onshore HVDC underground cables at the Anderby Creek Landfall;
- Up to 8 km of new underground HVDC cable, from the Landfall point at Anderby Creek to the EGL 5 converter station in the vicinity of the proposed 400 kV LCS-B in East Lindsey;
- Up to 1 km of new underground HVAC cable, between the EGL 5 converter station and the connection point at the proposed 400 kV LCS-B (the LCS-B substation is considered as part of the NGET GtW Project);
- Temporary construction traffic access from the public highway and for land access and permanent public highway modifications and upgrades to accommodate construction deliveries; and
- Temporary and permanent drainage and drainage mitigation, and utilities modifications and diversions.

3.1.2 NGET will also need to commission local changes to lower voltage distribution networks and provide appropriate utility connections to the converter station to facilitate the construction of the English Onshore components.

3.1.3 See **Figures 3-1 to 3-3: English Onshore Scheme Components** included as part of the NTS showing all English Onshore Scheme components. **Figure 3-3** shows the permanent infrastructure of the English Onshore Scheme.

3.2 English Offshore Scheme: Permanent infrastructure

3.2.1 The EGL 5 English Offshore Scheme would require the construction of approximately 423 km of subsea HVDC cable from Landfall at Anderby Creek, Lincolnshire, England, to where it meets the maritime boundary between English and Scottish waters. The subsea cable system would consist of two HVDC cables and a fibre optic cable (up to 140 km offshore) for control and monitoring purposes.

3.3 Construction programme

3.3.1 The indicative construction programme for the Project is set out below. Construction is programmed to start during 2029, with onshore access and early enabling works, and run through to 2035, when it is expected that the Project will be in-service and fully operational.

English Onshore Scheme

- 3.3.2 Subject to gaining a DCO in late 2028, it is anticipated that access and enabling works would start in 2029 once any relevant DCO requirements are discharged. The DCO will set out requirements that NGET must comply with as part of developing the Project. Access and enabling works include activities such as site clearance, the installation of construction compounds and access roads. It is expected that the main construction works would continue through to 2035 (approximately 6 years).
- 3.3.3 Reinstatement, comprising removal of construction haul roads, construction compounds, reinstatement of subsoil and topsoil and replacement of planting, such as hedgerow, would be required following construction. However, for specific components of the Project and at specific locations along the cable route, reinstatement would overlap with the wider construction programme.
- 3.3.4 EGL 5 is likely to start operating in early 2035. The construction programme will be developed as the Project progresses and will take account of seasonal constraints such as when protected species are breeding or hibernating and activities that could disturb these species may need to be limited.
- 3.3.5 An indicative construction programme for the English Onshore Scheme is provided in **Plate 3-1**. Further details on the phasing of the Project will be set out within the ES.

English Offshore Scheme

- 3.3.6 The construction programme for the English Offshore Scheme is expected to start in 2030. Construction is expected to take approximately 5 years with the English Offshore Scheme becoming operational in 2035.
- 3.3.7 Works at the Landfall may start in 2031 ahead of the main construction works.
- 3.3.8 The construction programme would be developed as the Project progresses and would take account of environmental conditions (e.g., weather, tides, currents), operational downtime, variable lead times for vessels and equipment, supply chain bottlenecks as well as implementation of any required mitigation measures for environmental sensitivities or sensitive receptors.
- 3.3.9 The current indicative construction programme for the English Offshore Scheme is provided in **Plate 3-1**. Further details on the phasing of the Project will be set out within the ES.

Plate 3-1 Summary of indicative construction programme

Year	2029	2030	2031	2032	2033	2034	2035
English Onshore Scheme							
Converter Station							
Access and enabling works							
Construction							
Underground Cables							
Access and enabling works							
Construction							
Testing and commissioning							
Final testing and commissioning							
Earliest in service date							
EGL 5 would be in service (operational)							
Reinstatement works							
English Offshore Scheme							
Anderby Creek Landfall							
Trenchless technique and duct installation							
Seabed preparation							
Pre-lay survey							
UXO target investigation							
Pre-lay grapnel run							
Boulder clearance							
Crossing of third-party infrastructure preparation							
Sandwave clearance							
Cable burial trial trenching (TBC)							
Offshore Construction							
Cable pull-in, cable lay and burial and crossings							
Jointing							
Remedial – external cable protection							
Post-lay survey							
Post-burial survey							

3.4 English Onshore Scheme: Construction methodology

Construction working hours

- 3.4.1 The proposed construction working hours for the English Onshore Scheme would be:
- Monday – Friday: 07:00 – 19:00; and
 - Saturdays, Sundays and Bank Holidays: 08:00 – 17:00.
- 3.4.2 Some English Onshore Scheme construction works would need to take place outside of these hours. Exceptions to the above working hours include but are not limited to:
- Continuous periods of operation such as concrete pouring, dewatering, cable pulling, cable jointing and drilling during the operation of a trenchless technique (e.g. HDD), installation and removal of conductors, pilot wires and associated protective netting across highways or public footpaths;
 - Internal fitting out works within buildings associated with the converter station;
 - Delivery of abnormal loads that may cause traffic on the local road network (e.g. transformer delivery vehicles, cable drum delivery) or any other highway works requested by the highway authority to be undertaken on a Saturday, Sunday or Bank Holiday outside of core working hours;
 - Testing or commissioning;
 - Completion of construction activities started during the approved working hours, which cannot safely be stopped;
 - Activities necessary in the instance of an emergency where there is a risk to persons, delivery of electricity or property; and
 - Survey works.

Access and enabling works

- 3.4.3 The initial access and enabling works that would be put in place to then facilitate the construction of the English Onshore Scheme would comprise:
- **Haul routes:** These would provide suitable access for the construction plant and traffic between public roads and the construction works. Following the removal of any vegetation and topsoil, which would be stored and reinstated once construction was complete, an appropriate surface would be put in place. Depending on the type and number of vehicles required for each given area, this could be stone or interlocking panels (that form a suitable surface to drive vehicles and construction plant along). The haul routes would be fenced and would also include the installation of drainage, and where required watercourse crossings. **Plate 3-2** illustrates how a haul route with a stone surface would be built.
 - **Temporary culverts and bridges:** These would be put in place where the haul routes cross watercourses, with culverts typically used on smaller watercourses and bridges typically on larger watercourses.
 - **Construction compounds and laydown areas:** These would be set up at several points along the cable route, at the Landfall and at the converter station. They would be located as close to public roads as possible and with access from the existing road

network. The compounds would store materials necessary for the works, including plant, waste, cable ducts, cable drums and accessories. In addition to storage, compounds also provide a location for site offices and welfare facilities for construction workers.

Plate 3-2 Typical installation of a haul route with stone surfacing



Step 1 The topsoil is carefully stripped from the land where the haul route would be built and stored whilst works take place



Step 2 A layer of synthetic material is installed to aid the removal of stone, where required, and to stabilise the stone layer for the haul route surface



Step 3 Highways specification stone is then laid for the haul route surface



Step 4 The haul route is then rolled and topped with a layer of smaller stones which vehicles can drive over



Step 5 Wheel washes are installed to reduce dust and soil leaving site

Construction Traffic Routes

Highway Modifications and AIL Delivery

- 3.4.4 At this preliminary stage in the Project, EGL 5 is continuing to explore methods of transporting abnormal indivisible loads (AIL) to the proposed converter station site. This includes the possibility of utilising a beach landing, in line with the Department for Transport Water Preferred Policy Guidelines (Ref 3.1) for the movement of AILs. This guidance sets out a “water-preferred” policy which encourages using water transport where it is practical, economically viable, and environmentally desirable. NGET will set out within the ES why waterborne transport is or is not appropriate for the Project in line with these considerations. At this time there is insufficient information available to inform a decision or assessment as to which transport method will be taken forward (by road/by port/by beach) for the Project, however this process will continue alongside the evolving design development, with appropriate consultation and engagement with key stakeholders to inform the final decision and assessment as part of the environmental statement and DCO application.
- 3.4.5 Further assessment and consultation is required to determine the route to Site for AIL delivery during construction. The current assumed construction routes to Site for AIL delivery and other construction traffic can be found in **Volume 1, Part 1, Chapter 4: Description of the Project** of the PIER, these routes will be confirmed at ES.

Temporary Access from Public Highways

- 3.4.6 Temporary access to the English Onshore Scheme from the public road network will be required during construction. Two options have been identified and are under consideration and further assessment at this stage, and are therefore both included within the draft Order Limits:
- The Alford Construction Route; and
 - The Shared Grimsby to Walpole Haul Route.

Construction of the Converter Station

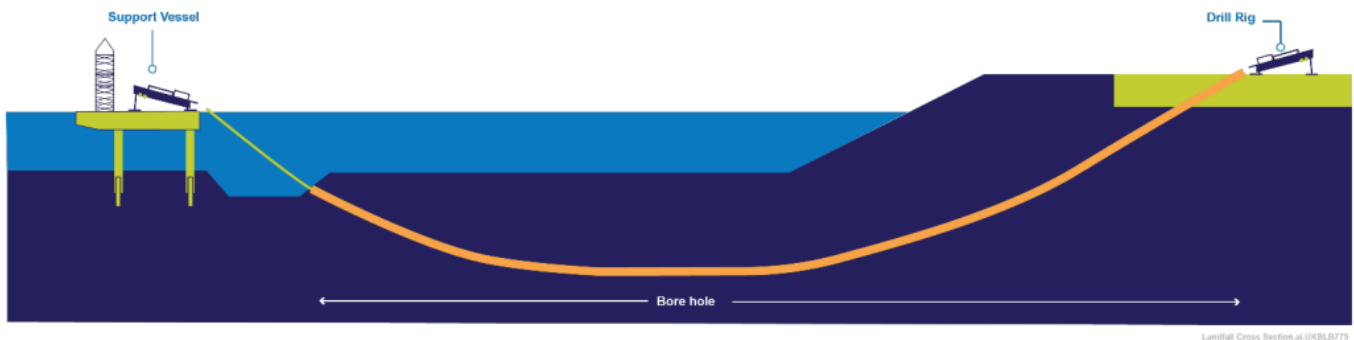
- 3.4.7 Following enabling works, as described above, the site of the converter station would be levelled to create a level surface and manage potential flooding. Works to improve ground conditions would take place and drainage, and utilities would be installed. There may be works to create landscape bunds for screening, but this is subject to further design work. The foundations of the converter station would be built, and once in place the structures and buildings would be built. Once the converter station is built, reinstatement works would take place, comprising the removal of construction compounds and haul routes and replanting of vegetation, including any environmental measures such as planting for biodiversity and/or landscape screening.

Anderby Creek Landfall

- 3.4.8 Following enabling works and set up of a construction compound, the transition joint bay would be built. The cables at the Landfall would be installed using a method that avoids digging open trenches (referred to as a trenchless technique), which would be used to install ducts, through which the cables would be installed / pulled. Various trenchless techniques exist, but most likely a form of installation known as Horizontal Directional Drilling (HDD) would be used. A small hole would be drilled at the Landfall, and a drill

would create a path or channel underground, which is widened to allow a cable to be pulled through. The cable would run from the transition joint bay, beneath any sea defences, to a point out at sea (referred to as a 'punch out' point). At this point, the cable would then be on or within the seabed (see Section 3.5 for more information on how cables are laid on the seabed). Once the cable was in place, the Landfall area would be reinstated with construction compounds and haul routes removed and ground conditions reinstated. **Plate 3-3** illustrates how cables ducts are drilled from onshore to offshore.

Plate 3-3 Installation of underground cables at Landfall



Installation of underground cables

- 3.4.9 The route of the proposed underground cables for the English Onshore Scheme (HVDC and HVAC) would be fenced off, vegetation cleared, and within this area drainage, stockpiles for excavated topsoil and sub-soil, access or haulage road and trenches would be installed. The width of the construction area or working width along the cable route would be approximately 49 m for HVDC cables and approximately 84 m for HVAC cables; these values do not include drainage or some access features associated with installation. Along much of the cable route an open cut trench, known as open cut, would be excavated. Following excavation of the trench, ducts would be installed, joined and surrounded by cement-bound sand of a similar material designed to help spread heat away from the cables. The soil above ducts would then be reinstated to the existing level and condition. Following trench reinstatement, the cables would be pulled into the ducts from joint bays at set points along the cable route. Further information on the detail of the trench dimensions and installation methods is provided in **Volume 1, Part 1, Chapter 4: Description of the Project** of the PEIR. **Plate 3-4** illustrates how cables would be installed using open cut trenches.
- 3.4.10 There would be no permanent above ground infrastructure required along the HDVC cable route except for small marker posts and at least one link pit¹. Marker posts may be installed along field boundaries, crossings, and other locations as appropriate to highlight the presence of the HVDC cable to landowners, asset owners and those undertaking works in the area. The link pit(s) would be required for monitoring the cables and would comprise a chamber lid on the surface. The link pit(s) may need to be fenced depending on land use.

¹ A trench or tunnel providing access to the HVDC cable

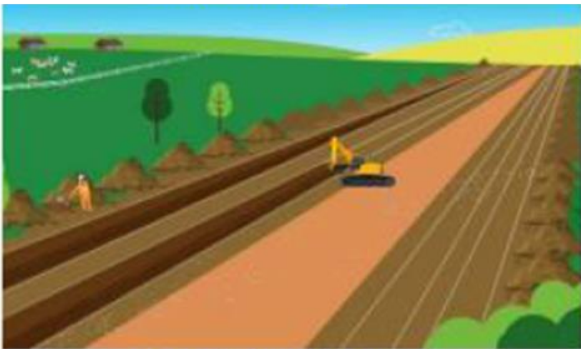
Plate 3-4 Typical installation of Underground cables using open trenches



Step 1 Cables are installed in one (HVDC) or two (HVAC) trench(es), adjacent to the temporary haul route



Step 2 The topsoil is carefully removed and stored separately alongside the trenches so it can be put back after the work is complete



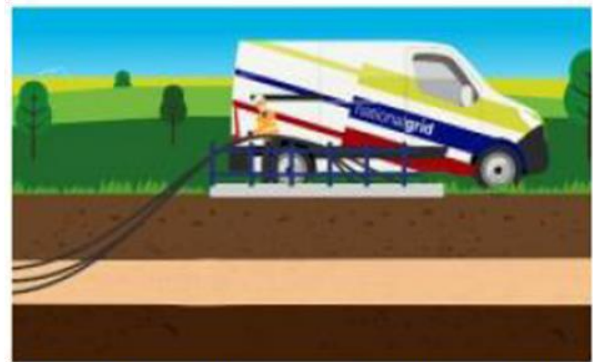
Step 3 Trenches are dug



Step 4 Ducts are installed into the trenches; the trenches are filled with a mixture of sand and cement to manage any heat transmitted from the cables and then backfilled



Step 5 Trenches are joined via a wider area called a joint bay



Step 6 The cables are pulled through the trenches within buried ducts



Step 7 The stored subsoil and topsoil are carefully replaced on top of the trenches and the haul roads removed. The land is reinstated and managed back to its previous condition

3.4.11 In some instances, open cut trenches cannot be used to install the cables or cable ducts. As with the Landfall, trenchless techniques may also be used along the cable route where the cable would need to cross major rivers, roads, flood defences or other utilities such as large gas pipelines. For this type of installation, two pits are dug on either side of the feature, under which a pathway for the cable needs to be drilled from one pit (entry) to the other side of the feature (exit). **Plate 3-5** illustrates how trenchless techniques would work.

Plate 3-5 Installation of underground cables using trenchless techniques



Step 1 The topsoil is carefully removed and stored for the temporary haul route and two pits are dug either side of the section of cable



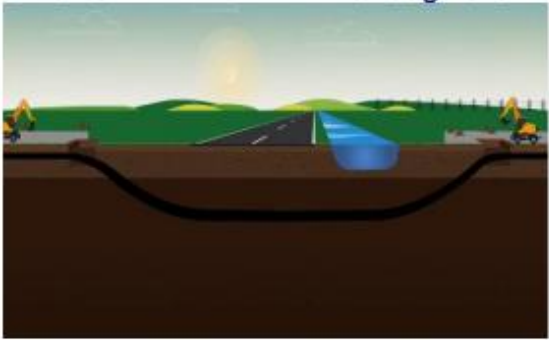
Step 2 From one pit a drilling machine that drills beneath the obstacle to the other side is launched



Step 3 A wire called a bond is attached to the drill and is pulled back to the other side of the works



Step 4 The bond is used to pull the ducts (the tubes that house the cables) through the newly drilled route



Step 5 Once complete the above ground sites are reinstated and the haul routes removed. The land is reinstated and managed back to its previous condition

3.5 English Offshore Scheme: Construction methodology

Construction working hours

- 3.5.1 The English Offshore Scheme would be a 24-hour operation to minimise overall installation time, maximise the use of suitable weather and current windows and take advantage of vessel and equipment availability.

Construction methodology

- 3.5.2 Before the English Offshore Scheme can be installed a number of surveys would be undertaken. These would check for any changes in existing conditions on the seabed and also provide technical information needed to install the cable. The surveys would also look for any potential unexploded ordnance (explosive weapons that failed to detonate as intended and remain a hazard).
- 3.5.3 Following the completion of the surveys, the seabed along the English Offshore Scheme cable route would then be prepared to make sure the equipment used for installation can operate efficiently and safely. This may comprise:
- Removal of boulders on the seabed using various techniques depending on the number and size of boulders present.
 - Clearance of debris from the seabed to remove any snagging risks using a technique that captures all types of debris at or just below the surface of the seabed, up to approximately 1 m depth. Such debris might comprise old cables or fishing gear.
 - Trial trenches to test for the equipment used for installing the cables.
 - Sand wave clearance to ensure cable installation equipment can safely operate and reach the required depth of burial. Sand waves are essentially underwater sand dunes formed by tidal currents.
 - Preparation of crossings where the cables will need to cross existing telecommunication cables, power cables and pipelines.
- 3.5.4 For installation, the cable would be transported to the location it is to be laid via a cable lay vessel. The cable would be installed by:
- laying the cable into a pre-cut trench followed by another vessel with equipment which would then bury the cable;
 - using a technique that would create a trench and lay the cable at the same time; or
 - lay the cables onto the seabed and another vessel would later bury the cables.
- 3.5.5 In locations where the cable needs to cross existing cables or pipelines or where the required burial depth cannot be achieved, external cable protection may need to be placed around the cable. This could comprise:
- Rock protection;
 - Concrete structure which is placed over the existing cable; and
 - Devices which reduce the velocity of the water as it passes the cable and encourages sediment to drop out of suspension and cover the cable or other forms of coverings.

3.5.6 Similar to onshore, the subsea cables would be laid in sections and 'jointed' together at points along the cable route.

3.6 Operation and Maintenance

3.6.1 For the English Onshore Scheme maintenance works would comprise:

- Inspections and repairs along the HVDC and HVAC cable routes;
- Weekly visits by a small team to the converter station to complete equipment inspections, services and replacements and repairs; and
- Equipment inspections, services and replacements and repairs at the converter station.

3.6.2 For the English Offshore Scheme, routine maintenance is not anticipated, however, the following activities may be periodically required during the operation phase:

- Inspection surveys, including geophysical surveys;
- Cable repair (if required); and
- Reburial, remedial protection or maintenance and reinstatement of external cable protection features.

3.7 Decommissioning

3.7.1 There are currently no specific plans to decommission the Project. It is expected that the transmission of electricity would continue for as long as there is a business case for doing so and that any decommissioning activity would occur decades into the future.

3.7.2 For the English Onshore Scheme in particular, the environmental impact of decommissioning cannot be fully assessed until the environmental conditions at the time of decommissioning, which may be several years into the future, are established. In any event, it is not anticipated that impacts from decommissioning would be any greater than impacts from the construction works.

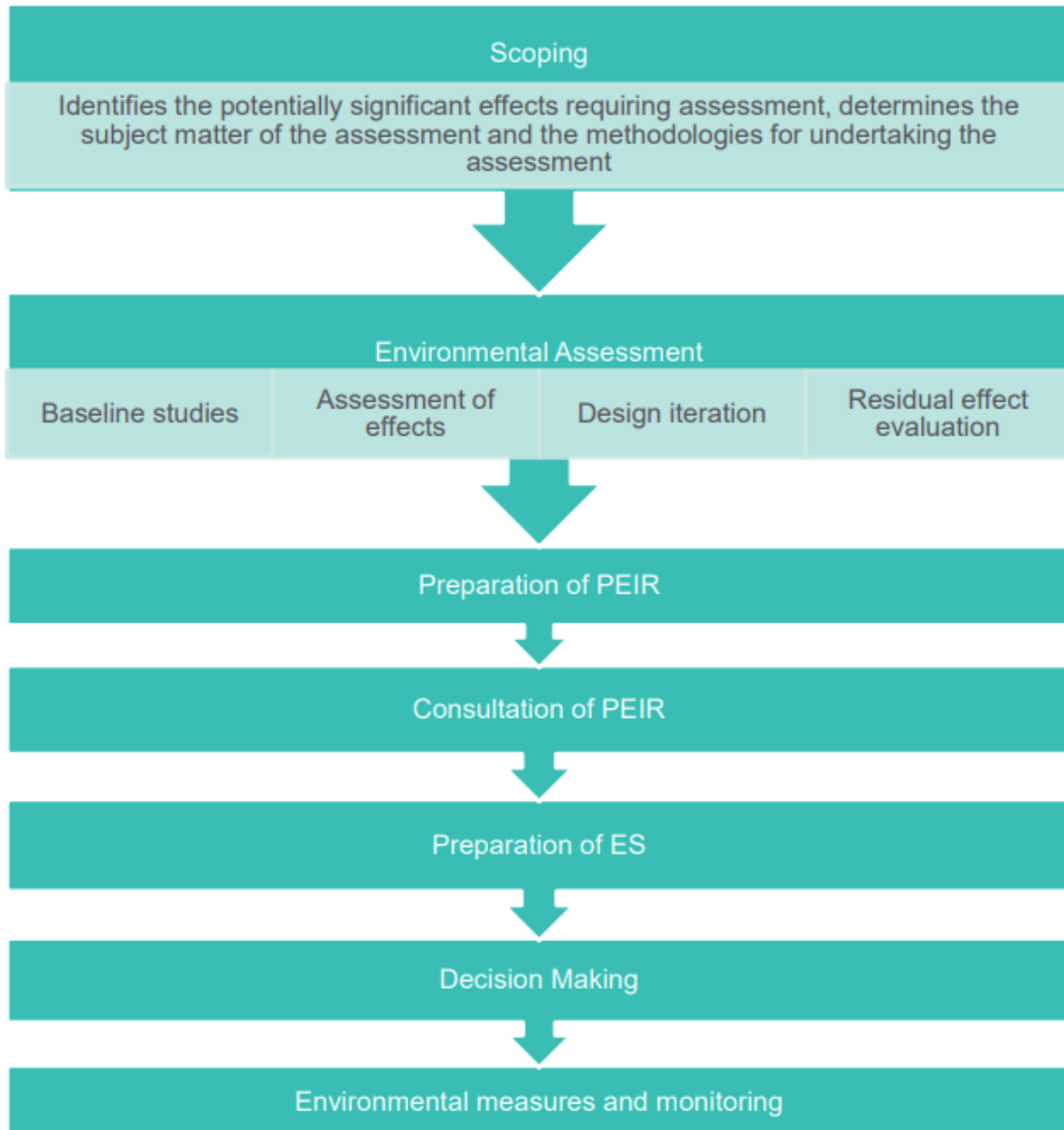
3.7.3 However, given the level of information available regarding the approach to decommissioning for the English Offshore Scheme, reasonable assumptions have been made as to the likely environmental impacts at the time of decommissioning. As such, **Volume 1, Part 3, English Offshore Scheme** has considered impacts associated with decommissioning within the technical aspect chapters. For potential impacts from decommissioning onshore, a summary is provided in **Volume 1, Part 1, Chapter 4: Description of the Project** of the PEIR.

4. EIA Approach and Methodology

4.1 Environmental Impact Assessment

- 4.1.1 EIA is the process of identifying and assessing the likely significant effects, both positive and adverse, of a proposed development. This involves identifying how people and the environment (identified in the assessment as specific receptors) could be affected by a development and incorporating environmental measures to avoid or minimise adverse effects or providing compensation to offset any potential likely significant adverse effects. Nearly all development has some effect, but this process identifies whether these effects are likely to be significant or not, and this information is used in the decision-making process by the Examining Authority and the SoS.
- 4.1.2 EIA considers all relevant environmental aspects that may be impacted, such as landscape and cultural heritage. The aspects to be scoped into the EIA were agreed with the Planning Inspectorate and other stakeholders through the EIA Scoping process.
- 4.1.3 EIA also requires the consideration of potential cumulative and interrelated effects:
- Inter-project (combined with other developments) cumulative effects (referred to as ‘cumulative effects within other existing and, or approved development’) are the effects resulting from the Project combining and interacting with the residual environmental effects of other committed development(s), affecting the same receptor. For example, effects upon users of the local road network because of traffic flows from the Project and traffic flows from a nearby committed industrial development.
 - Intra-project (within the Project) cumulative effects (referred to as ‘inter-relationships between aspects’) are potential likely significant effects resulting from the interaction of a combination of different residual environmental effects, which on their own are not significant, but could combine with other environmental aspects to create a significant effect on a receptor. For example, visual and noise effects during construction affecting users of a nearby Public Rights of Way (PRoW) would be assessed in the Health and Wellbeing chapter.
- 4.1.4 The EIA process is summarised in **Plate 4-1**.

Plate 4-1 The EIA Process



EIA Scoping

- 4.1.5 The process of scoping and the preparation of a 'Scoping Report' is the main mechanism for determining the 'scope' of the EIA i.e., what environmental aspects will be considered, what methods of assessment will be used, and how conclusions will be reached regarding the significance of environmental effects.
- 4.1.6 A Scoping Report (Ref 4.1) for the Project was submitted to the Planning Inspectorate on 2 September 2025, and a Scoping Opinion (Ref 4.2) was received from the SoS on 13 October 2025, which included comments from a range of stakeholders. The Scoping Opinion and the statutory consultee responses have subsequently informed the assessment work and further design evolution undertaken to date.

Informal consultation and engagement

- 4.1.7 Central to the delivery of the EIA has been, and will continue to be, the focus on engagement with statutory and non-statutory consultees, community stakeholders, and other interested organisations and individuals.
- 4.1.8 In addition to the formal scoping process NGET has held, and will continue to hold, informal engagement with the key prescribed consultees, as appropriate. This will allow NGET to refine the Project, the EIA and assist in the development of any required mitigation. Specific information on any feedback received to date is presented in the individual environmental aspect chapters of the PEIR, which include a 'Consultation and stakeholder engagement' section which provides a record of all relevant comments received in relation to that aspect.
- 4.1.9 Through the process of engagement and consultation, the aim is to reach agreement, as far as possible, with stakeholders prior to the submission of the application for the DCO. Statements of Common Ground will be developed between NGET and relevant stakeholders to document any areas of agreement and disagreement, which will be submitted to the Planning Inspectorate and published at the point of submitting the DCO application or during examination.
- 4.1.10 Ongoing stakeholder engagement has included:
- Regular liaison with the relevant Local Authorities and the Marine Management Organisation (MMO), including strategic and aspect specific meetings; and
 - Meetings with statutory stakeholders such as the Environment Agency, Historic England, Natural England, the Joint Nature Conservation Committee (JNCC) and non-statutory stakeholders to update them on the Project, discuss technical issues and respond to questions.
- 4.1.11 In addition, NGET has met with the Planning Inspectorate to provide updates on the Project, the design evolution activities and the approach to the EIA.

4.2 PEIR Approach and Methodology

- 4.2.1 The PEIR presents a preliminary assessment of the likely significant environmental effects of the Project. The PEIR has been prepared at a point in time during the EIA process when the design of the Project is still being refined, the likely significant environmental effects are still being assessed, and potential environmental mitigation measures are still being fed back into the design.
- 4.2.2 A description of the existing 'baseline environment' has been produced for the Project and, where appropriate the potentially affected areas around the draft Order Limits, through a combination of desk-based studies, consultation and site-specific surveys.
- 4.2.3 All 'potential effects' arising from the different stages of the Project are identified as part of the EIA, for example, loss of habitat or change in noise levels. The assessment considers the significance of each effect on each 'receptor' (the receiving environment, such as water, air, land, or specific species). The assessment is undertaken by EIA specialists such as ecologists and archaeologists. The general approach to determining 'significance' of an effect is to consider the sensitivity of a receptor alongside the nature and severity of the change. A detailed explanation of how different effects are deemed significant for each aspect is provided in each topic chapter of the PEIR.

- 4.2.4 All potential effects are considered as part of the EIA process. However, 'likely significant effects' are the key issues that are identified when considering the type of effect and the sensitivity of the environmental receptor.
- 4.2.5 The purpose of the PEIR is to enable members of the public, consultation bodies, and other stakeholders, to develop an informed view of the likely significant effects of the Project and comment on aspects of interest. Feedback received through the consultation process will be used by NGET to inform the ongoing development of Project design, and additional measures to address any identified potential likely significant environmental effects.
- 4.2.6 The full findings of the EIA process will be presented in an ES that will be submitted as part of the application for DCO.

Environmental Measures

- 4.2.7 EIA is an iterative process and opportunities for environmental mitigation, referred to as 'environmental measures', have been considered throughout the design development of the Project and in the assessment undertaken for the PEIR where likely significant effects have been identified. Where possible, these measures have been developed with input from key stakeholders together with appropriate technical standards, policies and guidance. These environmental measures include avoidance, good practice control and management measures (included within an Outline Code of Construction Practice (for on-shore works) or an Outline Construction Environmental Management Plan (for offshore works)) and design commitments.
- 4.2.8 At this preliminary stage, the surveys and assessment work have progressed to differing degrees for different technical assessments, and environmental measures have not all been defined or designed.

4.3 PEIR Structure

- 4.3.1 The PEIR is comprised of:
- **Non-Technical Summary** (this report);
 - **Volume 1: Main text:** This has been split into four parts:
 - **Part 1** Introduction - sets out an overview of the Project, an overview of the regulatory and planning context, an overview of the main alternatives considered; a description of the Project and it also sets out the proposed PEIR approach and method;
 - **Parts 2 and 3** provide the technical aspect chapters for the English Onshore Scheme and English Offshore Scheme respectively; and
 - **Part 4** of the PEIR presents potential effects which are project wide (e.g. greenhouse gas and cumulative effects).
 - **Volume 2:** Appendices; and
 - **Volume 3:** Figures.

5. Preliminary Environmental Assessment - English Onshore Scheme

5.1 Biodiversity

- 5.1.1 The biodiversity assessment completed to date is based on preliminary analysis of desk study records and field surveys undertaken at the point of writing. Fieldwork to date has mostly comprised surveys to classify the habitat types as well as arboricultural surveys to identify trees, woodlands and hedgerows within the draft Order Limits and the species which such habitats could support. Approximately 40% of the study area for the English Onshore Scheme² has been surveyed, at the time of writing.
- 5.1.2 The information provided in the PEIR cannot be taken as a complete picture of the potential presence and significance of important ecological features that could be affected by the English Onshore Scheme. The majority of detailed baseline surveys are yet to be completed, and a full and final account of the ecological baseline and detailed impact assessment will be presented within the ES. Therefore, the information presented in the PEIR is purposefully and necessarily high level in terms of the assessment of impacts in the absence of full baseline information.
- 5.1.3 A total of five internationally important designated sites are located within the 10 km study area. This includes two Special Areas of Conservation (SAC), two Special Protection Areas (SPA) and one Ramsar site. The closest of these sites is the Greater Wash Special Protection Area (SPA), which is partially located within the draft Order Limits. Two national statutory designated sites are located within 2 km; both are Site of Special Scientific Interest (SSSI). A total of 13 non-statutory designated sites are located within 2 km of the draft Order Limits, four of which are located within the draft Order Limits. The location of these sites is shown in **Volume 2, Part 2, Appendix 6.B: Biodiversity Desk Study Report**.
- 5.1.4 No Ancient Woodland sites are known to be directly impacted by the English Onshore Scheme (within the draft Order Limits). One single large area of Ancient Woodland, Welton Low Wood, has been identified adjacent to draft Order Limits (grid reference TF 46972 70514) but only for an area of proposed minor highway junction improvement. At the time of writing the Ancient Woodland is located more than 15 m from the draft Order Limits (15 m is the buffer zone within which effects on root systems of Ancient Woodland may occur (Ref 5.2)).
- 5.1.5 Ancient Woodland is identified as irreplaceable habitat by the UK Government and as such is of high value as a habitat of national importance. Project design requirements and potential impacts to the Ancient Woodland are to be explored further, with steps taken to avoid impacts (where possible) or apply mitigation to reduce potential impacts and effects. At the time of writing no veteran trees have been identified within the draft Order Limits of the scheme, however, arboricultural surveys are still ongoing, and the identification of any veteran trees will be included within the ES.

² draft Order Limits for the English Onshore Scheme plus 50 m.

- 5.1.6 Field surveys comprising Preliminary Ecological Appraisal (to map the types of habitats present and identify which protected species the habitats present are suitable to support) and Arboricultural Surveys (to identify trees, woodlands and hedgerows), wintering bird surveys and aquatic ecological reconnaissance surveys have so far been undertaken to inform the English Onshore Scheme. Survey work started in October 2025 and is currently on-going. Due to the proximity, extent and interconnectivity of the Project to the Applicant's other projects; GtW, and the EGL 3 and EGL 4 projects it has been deemed appropriate to use the data collected by these projects to help inform the biodiversity baseline for the PEIR.
- 5.1.7 The majority of the landscape is arable cropland, interspersed with other habitats such as neutral grassland. Field boundaries largely comprise ditches and hedgerows, but there are two larger drains which separate fields within the centre and west of the draft Order Limits. Desk study information indicates further pockets of notable habitat such as low-land meadow and saltmarsh.
- 5.1.8 The largely agricultural landscape supports a range of waders, geese, other waterbirds and birds of prey (including species for which internationally important nature conservation sites are designated, known as SPA and Ramsar qualifying species) during the winter and will likely support a range of farmland breeding bird species. Surveys at the Anderby Creek Landfall location have recorded a range of birds on the relatively narrow area of intertidal habitats (and out to sea) as well as on fields immediately inland, including waders, geese, ducks, other waterbirds and birds of prey.
- 5.1.9 The land within the draft Order Limits has the potential to (and/or does) support a number of protected and/or notable species, many of which will be subject to further surveys throughout 2026 including bats, badgers, otter, water vole, amphibians including great crested newt, fish and terrestrial and aquatic invertebrates.
- 5.1.10 As baseline survey data collection progresses, this will continue to inform the design to avoid impacts wherever possible through alterations to the Project's design, including construction methods. Environmental measures have already been outlined to minimise the risk of impacts to biodiversity and vegetation, and mitigation will continue to be developed following further baseline survey data collection and consultation with stakeholders.
- 5.1.11 In the absence of a full ecological baseline at this PEIR stage, it is considered too early to make meaningful conclusions about the effects on biodiversity and their significance for most ecological features without heavy reliance on assumptions and/or caveats. The information provided in this PEIR is preliminary, and the final assessment of potential likely significant effects on biodiversity will be reported in the ES. Where appropriate and where confidence exists at this PEIR stage, a preliminary assessment of anticipated biodiversity effects for some ecological features are presented below:
- **Designated sites for nature conservation:** based on the Zols of the English Onshore Scheme, it is anticipated that there would be no significant construction or operation stage effects on local and national statutory and non-statutory designated sites for nature conservation beyond 500 m from the draft Order Limits.
 - **Reptiles:** based on habitat suitability established from field survey data collected to date and desk study analysis of those land parcels not yet visited, along with the implementation of embedded environmental measures (including precautionary working methods during site clearance), potential likely significant effects upon reptiles are not anticipated as a result of construction of the English Onshore Scheme.
 - **Terrestrial invertebrates:** based on habitat suitability established from field survey data collected to date and desk study analysis of those land parcels not yet visited,

habitats mainly comprise arable farmland (which has negligible or low importance for terrestrial invertebrate assemblages). There is a limited distribution of habitats that are likely to support a terrestrial invertebrate assemblage of high value. As such, potential likely significant effects upon terrestrial invertebrates are not anticipated as a result of construction of the English Onshore Scheme.

- **Invasive non-native species (INNS):** with the implementation of embedded environmental measures (biosecurity controls) during construction, potential likely significant effects as a result of the spread of INNS are not anticipated.
- **Trees:** At the time of writing no veteran trees or Ancient Woodlands have been identified within the draft Order Limits of the English Onshore Scheme. The Contractor would apply the relevant protective principles set out in British Standard (BS) 5837:2012: Trees in relation to design, demolition, and construction (Ref 5.1), and the UK government 'Standing Advice' for Ancient Woodland, ancient trees and veteran trees (Ref 5.2). This would be applied to trees within the draft Order Limits, which would be preserved through the construction phase, and to trees outside of the draft Order Limits where such measures do not hinder or prevent the use of the relevant working width for construction. All works to high grade trees, including trees under Tree Preservation Orders and veteran trees, would be undertaken, or supervised by a suitably qualified arboriculturist. Details of such measures would be included in a method statement and within **Volume 1, Part 1, Appendix 5.B: Outline Code of Construction Practice (CoCP)** of the PEIR.

Effects during Construction

- 5.1.12 The potential impacts of the English Onshore Scheme mostly result from construction works. Potential impacts prior to any identified and or/embedded mitigation can be broadly categorised into: habitat loss, degradation and fragmentation (i.e., break up or separation) of habitats, disturbance to and displacement of protected and/or notable species (from light, noise, vibration, movement of traffic and people), direct mortality of protected and/or notable species, changes to watercourses and air quality which can then affect habitat and protected and/or notable species, introduction or spread of invasive, non-native species and pollution events.

Effects during Operation

- 5.1.13 Operation impacts are limited to environmental changes relating to disturbance associated with permanent infrastructure only.

5.2 Cultural Heritage

- 5.2.1 Information on the cultural heritage baseline is based on the results of preliminary desk-based research, which involved the collation of data from a range of sources including the National Heritage List for England (NHLE) and Lincolnshire County Council Historic Environment Record (HER), initial analysis of historic mapping, and initial analysis of remote sensing data. The requirements of national and local planning policy and professional guidance were also considered in the assessment.
- 5.2.2 Several study areas for the cultural heritage assessment were required through consultation with Historic England and Lincolnshire County Council and include land within the draft Order Limits, buffers of 500 m and 1 km from this boundary, and a wider study area of 3 km from the converter station. The proposed Landfall location is at Anderby Creek

on the Lincolnshire coast of the North Sea. The landscape character of the study areas is rural and is largely a mix of arable and pasture agricultural land, with settlements being dispersed. There are a total of 191 heritage assets in the study areas, of which 65 are designated. Three are Scheduled Monuments, including church yards and a castle. There are also 61 listed buildings, including churches, farmhouses and farm buildings, and one conservation area. There are no World Heritage Sites within the study area. Further information about cultural heritage assets is shown in **Volume 3, Part 2, Figures 7-1 to 7-3** of the PEIR.

- 5.2.3 Non-designated heritage assets vary across the study area, dating to the medieval and post-medieval period, the site of medieval settlements and various post-medieval dwellings, and heritage assets relating to the Second World War.
- 5.2.4 Engagement has taken place with Historic England, Lincolnshire County Council, Heritage Lincolnshire and East Lindsey District Council. This engagement has helped define the key considerations for assessing potential likely significant effects on heritage assets.

Effects during Construction

- 5.2.5 Archaeological remains of a 19th century farm, known as Low Barn Farm, Huttoft (MLI116611) is partly located within the draft Order Limits. This heritage asset will potentially be directly physically impacted and removed during construction for the cable installation. The magnitude of impact upon the farm is assessed as medium as not all of the heritage asset remains would be removed. On a heritage asset of low value, this would result in a permanent **minor** adverse effect (**not significant**). In addition, there are remains of a potential Romano-British settlement (MLI116296) partly located within the draft Order Limits and a **moderate** adverse **significant** effect is anticipated.
- 5.2.6 The construction phase will physically impact a number of non-designated heritage assets, including impacts to agricultural remains and former farmsteads, medieval settlement remains, a post-medieval tramway, and a sea bank.
- 5.2.7 Impacts due to changes within the setting of designated and non-designated heritage assets during construction are not anticipated to be significant due to the temporary nature of the activity.

Effects during Operation

- 5.2.8 There will be operation phase impacts on heritage assets around the converter station, caused by the presence of infrastructure in the landscape, and lighting of the converter station. Impacts caused by changes on the setting of heritage assets by the presence of the converter station are not included at this stage as the siting and design of the converter station has not been concluded to allow a full assessment of impacts.

5.3 Landscape and Visual Amenity

- 5.3.1 Assessment of landscape effects relates to the effects on the character of the landscape, including patterns and individual combinations of features in the landscape, such as hedgerows, fields, woodlands, settlements, alongside land use that make each type of landscape distinct.
- 5.3.2 The visual assessment is concerned with the assessment of impact on people's views and visual amenity, informed by walkover surveys to inform landscape qualities and the nature of the views available.

- 5.3.3 The Lincolnshire landscapes are defined by regular rectilinear field systems, engineered drainage networks, and the long established agricultural land uses that transition from the low-lying, maritime-influenced sand dunes, eastward into an agricultural plain before rising sharply into the rolling chalk hills and steep-sided valleys of the Lincolnshire Wolds.
- 5.3.4 Much of the land within the draft Order Limits is farmed for arable agriculture, with settlement restricted mainly to individual farms, hamlets or small villages. Dispersed villages, hamlets, and isolated farms are present throughout the draft Order Limits. Many of the fields in the marshlands or fenlands are bordered by drainage ditches, and trees and woodland are generally limited through the draft Order Limits, resulting generally in a strong sense of openness. Given the low-lying nature of the landscape within the draft Order Limits, there are streams, rivers, drainage ditches and canalised waterways to manage water and flooding.
- 5.3.5 Visual receptors within the study area have been identified within settlements, including hamlets, alongside 'recreational receptors' such as people exercising recreational activity at the beach, along the King Charles III England Coast National Trail, Coastal Country Park, Caravan Parks, and PRow.
- 5.3.6 Mitigation forms part of the ongoing, evolving design. At this stage, the work on avoidance in line with the mitigation hierarchy is most advanced and documented within the Corridor Preliminary Routeing and Siting Study (CPRSS). Further consideration of avoidance at the more detailed scale forms part of ongoing work involving multidisciplinary teams. Although other mitigation measures have not yet been defined due to the scheme's evolution, the assessment has been carried out with reference to the construction phase, year 0, and Year 15. The Year 0 scenario assessment is based solely on the proposed English Onshore Scheme, without any proposed mitigation. The assessment of the year 15 phase assumes potential mitigation based on the principle of reinstatement and localised enhancement. It has been assumed that the mitigation of the converter station would require a greater level of intervention in comparison with the cable corridor.

Landscape effects during Construction

- 5.3.7 There would likely be significant effects on the landscape character during construction as a result of changes in the landscape from the removal of vegetation and the presence of construction activities and machinery.
- 5.3.8 The likely significant effects were identified during construction on the setting of the Lincolnshire Coast Marshes National Character Area (NCA), but also other Landscape Character Areas (LCA's) defined within East Lindsey Landscape Character Assessment (Ref 5.3), such as Donna Nook to Gibraltar Point Naturalistic Coast, Tetney Lock to Skegness Coastal Outmarsh, Holton le Clay to Great Steeping Middle Marsh as construction will cross through these LCA's introducing uncharacteristic features associated with construction for the duration of construction.
- 5.3.9 The likely significant effects were identified on the setting of Lincolnshire Wolds National Landscape during construction, as construction would result in a substantial level of disturbance to the landscape surrounding Lincolnshire Wolds National Landscape.

Landscape effects during Operation

- 5.3.10 No significant landscape effects have been identified during operation for the English Onshore Scheme.

Visual effects during Construction

- 5.3.11 Although the nature of the views is frequently open, these are often foreshortened by shelterbelts around settlements, gentle landform undulation, and field boundary vegetation present close to the visual receptors. A range of residential and recreational receptors would be significantly affected by construction, although the identified effects would often relate to a part of the settlement, as views from other parts of the settlement would not be affected. Similarly, recreational receptors may experience views towards construction from a section of the PRow.
- 5.3.12 Views of the upper sections of construction activity associated with the converter station, and the temporary presence of cranes, will be available from several settlements within the study area, including Maltby le Marsh, Saleby, Asserby, Thoresthorpe and Ailby, with the change visible above existing belts of intervening vegetation. Views of construction activity associated with the converter station at ground level, however, will be largely screened by existing vegetation and intervening built form. Construction within the Landfall area will be screened for most receptors in the study area.

Visual effects during Operation

- 5.3.13 Upon completion, the effects would reduce for most residential and recreational receptors. As land use would be largely restored, the key effects would be associated with the introduction of the converter station. The converter station would be primarily visible from the settlements located closest to the draft Order Limits. In many locations, including visual receptors at Mumby, Sutton-on-Sea, Hannah, Markby, Ailby, Huttoft, Alford, Anderby Creek, Rigsby, Farlesthorpe, Cumberworth, and Althorpe Row. However, the views towards the converter station would be largely filtered and restricted to the upper sections of the converter station.
- 5.3.14 Potential mitigation planting following construction would further restrict the views at Year 15, providing a considerable degree of integration of the converter station in the views. Limited visibility of the upper parts of the converter station would remain for some receptors.

5.4 Water Environment

- 5.4.1 A desk study has been undertaken to inform the preliminary assessment, supported by data collected from several stakeholders. No site walkover has been conducted to date, however, in preparation of the ES a walkover will be conducted in Spring 2026.
- 5.4.2 The study area for the water environment includes land within the draft Order Limits, and, in addition, a buffer of 500 m from this boundary. The proposed Landfall location is on the Lincolnshire coast of the North Sea. The Woldgrift Drain is the only major river (known as main river) in the study area. There are also numerous tributaries of these rivers, classified as ordinary watercourses, such as Boygrift Drain.
- 5.4.3 Land drainage in large parts of the study area is managed by Internal Drainage Boards, and many of the watercourses in the study area have been modified for land drainage and flood defence purposes.
- 5.4.4 Watercourses in the study area receive, transport and dilute consented and informal discharges and support abstractions of water for a range of uses.

- 5.4.5 The study area crosses multiple catchments of Water Framework Directive (WFD) waterbodies and is located within the Anglian River Basin District. The majority of the surface waterbodies have an ecological status of moderate, and all have a chemical status of fail.
- 5.4.6 At the proposed Landfall location, the draft Order Limits cross large extents of coastal floodplain, which is defended from regular inundation by embankments and dunes. For the rest of the study area (Landfall to and including the converter station), the draft Order Limits also cross large extents of floodplains that are influenced by rivers and tides and are defended, reducing the risk of flooding.
- 5.4.7 Although most of the land within the study area is shown to be at very low risk of surface water flooding (annual chance of flooding of less than 0.1%), there are isolated areas of high risk (annual chance of flooding greater than 3.3%), concentrated around land drainage pathways and watercourse channels.
- 5.4.8 Information about the water environment and areas of flood risk in relation to the Project can be viewed in **Volume 3, Part 2, Figures 9-1 to 9-5** of the PEIR.
- 5.4.9 With regard to flood risk and land drainage, future baseline conditions would be forecast, drawing on current best practice guidelines taking into account the likely impacts of climate change on rainfall intensities, and where applicable, peak river flows and sea level rise. These future conditions would be considered to factor climate change resilience into the design of the English Onshore Scheme.
- 5.4.10 It is expected that the Water Framework Directive legislation will drive future improvements in the ecological and chemical quality of waterbodies. The effects of the implementation of future cycles of river basin management plans would therefore also be considered when assigning value to water environment receptors.
- 5.4.11 A range of environmental measures would be implemented as part of the English Onshore Scheme, and further information about these is provided in **Volume 1, Part 2, Chapter 9: Water Environment** of the PEIR. The preliminary assessment of water environment effects assumes that all environmental measures are in place before assessing the effects.
- 5.4.12 Areas protected for nature conservation interest sites which are water dependent are still to be identified and confirmed. However, effects on these receptors would be avoided or mitigated by the environmental control measures that have been identified. A full assessment of effects will be presented in the ES, informed by further data and ecology surveys. Those sites with a hydrological dependence will be included as receptors in the water environment assessment in the ES.

Effects during Construction

- 5.4.13 The preliminary assessment of water environment effects has identified the potential for likely significant effects linked to watercourse crossings. However, any potential adverse effects on the water environment are anticipated to be temporary and localised.
- 5.4.14 Where permanent infrastructure is proposed for the converter station, there will be potential for temporary impacts on water quality during the works and potential for permanent changes to the land drainage regime. The watercourse diversions required has the potential to cause permanent changes to the hydromorphology of these watercourses. The magnitude of change and significance of effects assigned in the preliminary assessment (ranging from minor to moderate) will be confirmed in the ES once more detail is available on the watercourse diversion proposals and the environmental measures that would be in place.

- 5.4.15 The preliminary assessment relating to flood risk and land drainage concludes that no significant effects are anticipated, but this will be confirmed through the completion of a Flood Risk Assessment (FRA). The FRA will be informed by flood modelling of the Land-fall and converter station areas of the draft Order Limits and will outline the proposed mitigation measures/commitments to ensure the Project, during its construction, is safe from flooding and that there would be no detrimental effects on flood risk from surface water, rivers and the sea or the functioning of flood defences.

Effects during Operation

- 5.4.16 The preliminary assessment of water environment effects suggests that there would be no likely significant effects during operation.
- 5.4.17 The FRA will outline the proposed mitigation measures/commitments to ensure the Project is safe from flooding over their lifetime and that there are no detrimental effects on flood risk from rivers and the sea because of these interactions. Subject to the implementation of such measures, potential adverse effects on flood risk from rivers and the sea are expected to be not significant.
- 5.4.18 Upon completion of the Project, the working areas would be removed, and the land within the draft Order Limits returned to its pre-construction condition. There would be permanent changes to the land at the converter station as the surfaces needed for the converter station, including access roads, would create an impermeable footprint. The designs of these elements of the English Onshore Scheme would incorporate appropriate surface water drainage measures and suitable drainage provisions would also be included for accesses. Due to the robust design and environmental measures that would be adopted, no likely significant effects on flood risk and land drainage are anticipated.

5.5 Geology and Hydrogeology

- 5.5.1 The study area for geology comprises the draft Order Limits for the English Onshore Scheme, plus a 250 m buffer. For hydrogeology, the study area comprises land directly affected by the English Onshore Scheme (draft Order Limits) plus a 500 m buffer.
- 5.5.2 A drive through of the English Onshore Scheme and targeted geological walkover was undertaken between 9 - 12 December 2025.
- 5.5.3 Whilst a Hydrogeological survey will have been carried out prior to the submission of the PEIR, the data was not available in time to inform the assessment. Therefore, a full Hydrogeological assessment will be included within the final ES.
- 5.5.4 The mapped geology along the route varies and includes superficial geology (upper layers) of mixtures of Clay, Silt, Sand and Gravel, with possible peat layers, and bedrock geology including Chalk and Sandstone.
- 5.5.5 The land use of the English Onshore Scheme and surrounding areas is predominantly agricultural (farmland). Features noted for having potential impact to geology include historical landfills and local infilled land (e.g. ponds), former railways and occasional industrial land uses. Historical landfills are recorded within the English Onshore Scheme and nearby.
- 5.5.6 There are no records of pollution incidents with major or significant impact to land recorded in the English Onshore Scheme, there is one pollution incident with minor impact to land within the study area.

- 5.5.7 Radon gas is a natural geological phenomenon to which prolonged exposure can cause health risks. Radon risk is low at the Landfall and the converter station and low to medium along the route of the proposed HVDC cable however, no occupied buildings are planned in this area.
- 5.5.8 Risk of unexploded ordnance (e.g. bomb risk) has been assessed to be moderate on a section of beach at Anderby Creek, before Landfall, for the remainder of the English Onshore Scheme the risk was assessed as low.
- 5.5.9 Within the draft Order Limits, the groundwater environment largely comprises Chalk Principal and Secondary A and B aquifer units, which form a regionally important groundwater resource. The Sensitive interactions between groundwater and surface water include the presence of baseflow fed streams and potential springs. A number of Source Protection Zones (areas identified to protect sources of groundwater for drinking water from contamination) are present associated with public groundwater abstractions within the Chalk. Private Water Supplies and potential springs are located along the underground cable route, and the presence and usage of any supplies will be verified by site survey prior to starting the ES.
- 5.5.10 Information about groundwater and geology in relation to the Project can be viewed in **Volume 3, Part 2, Figures 10-1 to 10-9** of the PEIR.
- 5.5.11 Hydrogeological conditions may be prone to change because of climate change. Climate change predictions for the UK indicate a trend of wetter winters, drier summers, higher average temperatures, and higher intensity rainfall events. These could have an impact on soil erosion, groundwater levels, and indirectly (through groundwater level changes) - potential for mobilisation of contamination. Given the nature of the English Onshore Scheme, any change in baseline resulting from these factors would be unlikely to have a meaningful influence on the assessment of effects. However, this will be reviewed as part of the ES.
- 5.5.12 A range of environmental measures would be implemented as part of the English Onshore Scheme. The preliminary assessment of geology and hydrogeology effects assumes that all environmental measures are in place before assessing the effects.

Effects during Construction

- 5.5.13 For geology, potential sources of contamination have been identified locally. However, with the implementation of environmental measures, including ground investigations and if needed, remediation measures before construction works start, no significant effects are likely.
- 5.5.14 For hydrogeology, no significant effects on groundwater receptors, including public and private water supplies, Water Framework Directive groundwater bodies, groundwater dependant ecological sites, and people at risk of groundwater flooding are likely during construction with the implementation of appropriate environmental measures such as measures to control and store materials on-site. Hydrogeological conclusions are preliminary at this stage, and a full assessment will be undertaken at ES.

Effects during Operation

- 5.5.15 The preliminary assessment of geology and hydrogeology effects has identified that there are no likely significant effects on geology or hydrogeology once the English Onshore Scheme is in operation. Design measures will be built into the Project to prevent and minimise effects from the operation of buildings and infrastructure.

5.6 Agriculture and Soils

- 5.6.1 A desk study has been undertaken to inform the preliminary agriculture and soils assessment using publicly available information. Agricultural Land Classification (ALC) and soil surveys are scheduled to take place during Spring-Summer 2026. Whilst the information from ALC surveys is not available for the preliminary assessment, the full survey results will be used to inform the assessment presented in the ES.
- 5.6.2 The study area for the assessment of Agriculture and Soils comprises the draft Order Limits. This is considered appropriate as no Agriculture and Soil receptors will be affected outside of the draft Order Limits.
- 5.6.3 The geology within the draft Order Limits is mapped as comprising chalky sedimentary bedrock of shallow marine origin. To the east of the draft Order Limits this bedrock is mapped as being overlain by drift deposits comprising Tidal Flat Deposits (described as being clay and silt); from the A52 westwards, i.e. the majority of the draft Order Limits, superficial deposits are present and are mapped as comprising Devensian (sand and gravel) and Devensian diamicton till. The geology is important as its characteristics (whether solid or drift) influences many of the characteristics of the soils which develop at the surface.
- 5.6.4 A total of five main soil types (Soil Associations) have been identified within the draft Order Limits; these largely comprise deep loamy and clayey mineral soils.
- 5.6.5 Available Provisional ALC mapping³ indicates that the draft Order Limits are likely to comprise predominantly best and most versatile (BMV) land; this is land which falls into Grade 1, Grade 2 and Grade 3a categories.
- 5.6.6 The draft Order Limits are predominantly mapped as Provisional ALC Grade 3, with areas of Provisional ALC Grade 2 land mapped north of Alford and east of Bilsby. ALC Grade 3 includes subgrades 3a and 3b; these subgrades can only be identified through detailed surveying of the area.
- 5.6.7 The land use within the draft Order Limits is predominantly arable and grassland. Field boundaries are lined with hedges, trees, drainage ditches and roads throughout the draft Order Limits. There are areas of land within the draft Order Limits which are mapped as being covered by Countryside Stewardship Agreements.
- 5.6.8 Information about land use, soils and agricultural land can be viewed in **Volume 3, Part 2, Figures 11-1 to 11-4** of the PEIR.
- 5.6.9 Whilst there could be potential changes in the future in relation to climate change, it is considered that the baseline conditions for soils and ALC grades will remain unchanged from those described in the baseline during the construction period of the English On-shore Scheme.
- 5.6.10 A range of environmental measures would be implemented as part of the English On-shore Scheme. The preliminary assessment of agriculture and soils effects assumes that all environmental measures are in place before assessing the effects.

³ a classification system used to assess the agricultural quality of land within England and Wales

Effects during Construction

- 5.6.11 The preliminary assessment of agriculture and soils suggests that there is the potential for likely significant effects during construction on BMV land and on soils.
- 5.6.12 During the construction phase, there would be a potential loss of BMV land from agricultural productivity whilst construction works take place. Whilst some land would only be required temporarily during the construction phase, given the scale of the Project, it is considered that this temporary loss of land would have a significant effect on agricultural land and soils. However, this land would be reinstated following good practice guidelines following the construction phase.
- 5.6.13 Some land would be required permanently for the converter station and its associated access routes. The extent of land required permanently is considered likely to result in a significant effect. The permanent loss of BMV land for the English Onshore Scheme as a result of the converter station and permanent access routes, is estimated to be between 20 and 30 hectares. This is based on a converter station footprint of 8.75 hectares and predicted access route widths and lengths available at the time of assessment (likely to be around 20 hectares).
- 5.6.14 Where practicable, all surplus soil (as a result of the construction of permanent infrastructure) would be re-used within the English Onshore Scheme. However, the high sensitivity of BMV land means that even a temporary impact could have a potential likely significant effect.
- 5.6.15 There are some effects considered in the preliminary assessment that are not expected to be significant given the environmental measures that would be in place, for example, potential effects on landholdings where land take is temporary and where compensation measures will be put in place.
- 5.6.16 The assessment will be updated in the ES once survey work is completed and there is data available to confirm the actual extent of BMV land and sensitive soil types affected both temporarily and permanently.

Effects during Operation

- 5.6.17 Effects on agricultural land and soils resulting from operation were scoped out of this assessment and therefore no details are included here.
- 5.6.18 During operation, the buried cables are not anticipated to limit agricultural activities, and any maintenance or repair works are likely to be small-scale and temporary, with works undertaken in accordance with good practice at the time of the works. An indication of typical maintenance activities will be presented where needed for the ES and the potential for impacts re-assessed.

5.7 Traffic and Transport

- 5.7.1 The preliminary assessment has considered the potential likely significant effects of the English Onshore Scheme on those using the transport network, such as pedestrians, cyclists, public transport users and vehicle drivers and passengers.
- 5.7.2 Once the English Onshore Scheme is in operation the volume of traffic would be very limited and associated with visits to the converter station as well as along the cable route for inspections and maintenance works. As the number of vehicles is unlikely to impact traffic flows along the road network, a detailed assessment of traffic during operation of

the English Onshore Scheme has not been undertaken and the preliminary assessment has focused on effects during the construction phase.

- 5.7.3 The information used in the PEIR is based on a desk study, which included a review of the overall road network, public transport and accident data from national and local government sources as well as information about the railway network. Surveys using automatic traffic counters will be undertaken on roads expected to be used by construction vehicles where recent traffic data is not available in April 2026 to collect information about existing traffic volumes and speeds at which traffic is travelling.
- 5.7.4 The public highway network comprises the strategic road network, which is managed and maintained by National Highways, and the local road network, which is managed and maintained by the relevant local highway authorities. The traffic study area comprises the road network, which is likely to be used by traffic associated with the English Onshore Scheme and any roads falling within the draft Order Limits or that may require temporary road restrictions or management schemes. The study area also includes PRow and cycle routes that fall within the draft Order Limits or that might be used for construction traffic, for example, should a haul route be routed along a track which is a PRow.
- 5.7.5 Key roads that are proposed to be used to access the English Onshore Scheme during construction include the A16, A1104, A1111, A52 A157, B1373 and B1449. There may also be a need to use smaller connecting “C” and “U” class roads. However, an access strategy has been developed, which aims to avoid residential areas and narrow roads. The construction access routes are also shown in **Volume 3, Part 2, Figure 12-4** of the PEIR.
- 5.7.6 Information obtained from the Department for Transport has identified a number of collisions that have occurred on the highway network surrounding the English Onshore Scheme. One collision ‘cluster’ has been identified from the data: the A16 in proximity to the junctions with Greenfield Lane and Bluestone Heath Road. The locations of all collisions are shown in **Volume 3, Part 2, Figure 12-5** of the PEIR.
- 5.7.7 The English Onshore Scheme potentially affects a number of PRow. The traffic and transport preliminary assessment has identified 39 PRow within the draft Order Limits would potentially be temporarily affected by the English Onshore Scheme. The English Onshore Scheme is also likely to impact the King Charles III England Coast Path, a National Trail, which passes through the draft Order Limits between Sandilands and Anderby Creek. These are shown in **Volume 3, Part 2, Figures 12-2** of the PEIR.
- 5.7.8 No National Cycle Network (NCN) routes will be affected by the English Onshore Scheme. Three local cycle routes publicised by Visit Lincolnshire would potentially be affected by the English Onshore Scheme: the Lincolnshire Wolds, Humber to the Wash, and Alford to the Coast cycle routes. These are shown in **Volume 3, Part 2, Figure 12-3** of the PEIR.
- 5.7.9 The English Onshore Scheme does not impact any railway lines.
- 5.7.10 The English Onshore Scheme does not impact any navigable waterways.
- 5.7.11 A range of environmental measures relating to transport network users will be incorporated into the English Onshore Scheme. Examples include the following:
- Preparation and implementation of an Outline Construction Traffic Management Plan that will include construction traffic management measures and controls on construction vehicle types, hours of site operation and delivery routes for goods vehicles.

- A monitoring and reporting system which will check that the Principal Construction Contractor(s) are complying with the measures set out in the Outline Construction Traffic Management Plan.
- A booking system to control timing of deliveries, if needed, to ensure construction traffic vehicles are minimised during peak traffic periods.
- Preparation and implementation of an outline PRow Management Plan that includes measures to manage and mitigate effects on the PRow network, such as diversion routes.

Effects during Construction

5.7.12 Based on the proposed location and layout of English Onshore Scheme at this stage, plus the incorporation of appropriate environmental measures, there is the potential for likely significant effects on the following roads as a result of the construction traffic:

- A16 London Road; and
- A52 Sutton Road.

5.7.13 These effects are unlikely to occur for the full duration of the construction programme. The types of effects that could occur include delays to drivers as well as a number of effects on pedestrians, for example, delay due to an increase in the flow of traffic and fear and intimidation effects.

5.7.14 Further work will be undertaken to support the transport assessment that will be presented within the ES. This will include further engagement with relevant stakeholders and further baseline data gathering, including additional traffic surveys. The results from these surveys will be used to update the understanding of current traffic movements.

Effects during Operation

5.7.15 No significant traffic and transport effects have been identified during operation for the English Onshore Scheme.

5.8 Noise and Vibration

5.8.1 Current legislation and planning policy and desk study information have been used to inform the consideration of noise and vibration effects. Such effects are likely to result from noise and vibration from construction machinery and traffic, and once the Project is operating from equipment within the converter station.

5.8.2 Specific study areas have been defined for the different types of noise and vibration effects.

5.8.3 No noise monitoring has been undertaken to support the PEIR, with the current baseline noise climate described subjectively taking into account Department for Environment, Food and Rural Affairs' Noise Mapping and consideration of commercial aerial photography. The study area is predominantly rural with minimal large infrastructure, and noise levels are expected to be generally low, except near transport links like A-roads and railways; future baseline noise levels are expected to increase over time due to natural traffic growth and new developments.

- 5.8.4 A range of environmental measures will be implemented to mitigate noise and vibration effects; these include design measures and control and management measures. Best Practicable Means will be used for the control of construction noise and vibration. Operation noise will be controlled through design measures, including undergrounding of cables, and all above-ground infrastructure will be designed to minimise noise and vibration impacts.

Effects during Construction

- 5.8.5 The preliminary assessment of construction activity noise concludes a potential likely significant adverse noise effects during the core construction working hours, evident from the information provided during the “haulage road installation” works along the English Onshore Scheme; with all other construction phases and activities unlikely to result in significant adverse effects. Best Practicable Means would be implemented to further reduce these effects to a minimum.
- 5.8.6 Construction traffic has not been assessed for potential road traffic noise impacts to date, so conclusions on the likelihood of significant adverse effects on existing highways and the need for mitigation is not yet known. Therefore, mitigation options and design considerations will be reviewed and considered as necessary at the ES stage, as further information becomes available during the development of the construction programme. In addition, measures implemented under the Outline Construction Traffic Management Plan would be implemented to control road traffic noise impacts.
- 5.8.7 The preliminary assessment of construction vibration concludes no potential likely significant adverse effects based upon the information supporting the PEIR.

Effects during Operation

- 5.8.8 The preliminary assessment of operation noise is limited to the equipment within the converter station. However, as the layout of these components and equipment details had not been finalised at the time of the PEIR, the potential for adverse noise impacts cannot be quantified at this stage.
- 5.8.9 Following the PEIR, the noise and vibration assessment will be refined and developed and reported within the ES. This will involve continued consultation with local planning authorities. Baseline noise surveys will be undertaken to determine existing noise levels at sensitive receptors around the above ground installations, along with detailed assessments for construction noise and vibration, construction traffic noise, and operation noise.
- 5.8.10 The English Onshore Scheme will be reviewed following stakeholder consultation feedback and further design refinement implemented, considered and assessed in the ES. Further environmental measures will be identified and implemented as necessary to ensure noise is controlled and mitigated to a minimum.

5.9 Air Quality

- 5.9.1 A desk study has been undertaken to inform the air quality preliminary assessment, using publicly available information. During operation of the Project, the number of vehicles for maintenance works is unlikely to impact traffic flows along the road network. Therefore, a detailed assessment of air pollutant emissions from traffic during the operation of the English Onshore Scheme has not been undertaken.

- 5.9.2 Construction traffic flows were not available in a suitable format for screening at PEIR stage and therefore a construction vehicle emissions assessment has not been undertaken. Construction traffic data will be screened for vehicle emissions assessment at ES stage. In addition, detailed dispersion modelling to assess potential impacts on people will be undertaken as part of the ES once detailed traffic data is available, and should relevant traffic screening criteria be exceeded.
- 5.9.3 The air quality study area is shown on **Volume 3, Part 2, Figure 14-1** and **Figure 14-2** of the PEIR.
- 5.9.4 Limit Values for air quality have been established for specific air quality pollutants. Department for Environment, Food and Rural Affairs' Pollution Climate Mapping provides mapping of pollutant concentrations. A comparison of this mapping against the roads potentially affected by construction traffic has shown that there is no risk of the emissions from construction traffic resulting in the Limit Values not being complied with.
- 5.9.5 Construction machinery, known as Non-Road Mobile Machinery (NRMM), would be active during the construction phase of the English Onshore Scheme at the construction compounds and converter station location and could produce air pollutant emissions. Once the Project is in operation there would be emergency diesel back-up generators to power equipment, if required, at the converter station. Sensitive human and ecological receptors within a 200 m radius from likely long-term locations of NRMM will be considered at ES stage once detailed information on the type, number, location, power rating and operational hours of NRMM to be used is available.
- 5.9.6 Air quality modelling of construction phase NRMM and operation phase emergency generators would be reviewed at the ES stage to assess whether emissions from construction machinery and emergency generators could have potential likely significant effects on the people present around the English Onshore Scheme.

Effects during Construction

- 5.9.7 The unmitigated risk from construction dust associated with the English Onshore Scheme has been determined as high, however this does not take into account measures to manage dust. To reduce risks from dust impacts a series of standard environmental measures outlined in guidance by the Institute of Air Quality Management would be implemented as part of the English Onshore Scheme. With these measures in place, the effects from construction dust would be considered not significant.
- 5.9.8 Air quality modelling of construction phase NRMM would be reviewed at the ES stage to assess whether emissions from construction machinery could have potential likely significant effects on the people present around the English Onshore Scheme.

Effects during Operation

- 5.9.9 Air quality modelling of operation phase emergency generators would be reviewed at the ES stage to assess whether emergency generators could have potential likely significant effects on the people present around the English Onshore Scheme.

5.10 Socio-economics, Recreation and Tourism

- 5.10.1 A desk study has been undertaken to inform the preliminary assessment of Socio-economics, Recreation and Tourism effects using publicly available information. No site

surveys have been undertaken as part of the PEIR, and these are not considered to be required as part of the ES for this assessment.

- 5.10.2 The study area for the assessment of Socio-economics, Recreation and Tourism varies according to receptor:
- For Socio-economics, the study area for employment generation comprises a '*local*' (East Lindsey District Council and Lincolnshire County Council) and a '*regional*' (East Midlands) study area, as this represents the principal labour market catchment area and incorporates the population that may reasonably be expected to travel to and benefit from employment associated with construction of the Project.
 - For Recreation, the study area for public access for walkers, cyclists and horse riders comprises those PRoW that are located within the draft Order Limits and a 500 m study area beyond the draft Order Limits.
 - For Tourism, the study area considers tourist attractions and tourist accommodation within the draft Order Limits and a 5 km study area from the draft Order Limits, as this is the area within which attractions or accommodation providers are most likely to be affected by the English Onshore Scheme.
- 5.10.3 The socio-economics, recreation and tourism study area is shown in **Volume 3, Part 2, Figures 15-1 and 15-2** of the PEIR.
- 5.10.4 The baseline population trends within the study area identify that the proportion of working age residents, economically active residents and availability of jobs at the county and district level is slightly lower than at the regional and England averages. Across the local authority district which comprise the local study area, a high proportion of employee jobs were in Accommodation and Food Services and Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles sector. The proportion in Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles is similar to the county proportions but slightly higher than the regional and England levels, whereas the proportion in Accommodation and Food Services is higher than the county, regional and England proportions.
- 5.10.5 The Indices of Multiple Deprivation ranks East Lindsey 20th out of the 296 local authorities for Education, Skills and Training Deprivation. This suggests a moderate to high level of deprivation within the local study area, with East Lindsey falling within the 10% most deprived local authorities in England.
- 5.10.6 Within the study area there are a total of 77 PRoW and designated routes, 43 of which fall within the draft Order Limits. These PRoW are typical local routes, many of which provide essential, daily connections for people using these routes for recreation within their local area or accessing local services and facilities without using a vehicle. Some of these PRoW also connect to other PRoW to form a wider network, allowing users access across a local authority district or county. Whilst the majority of PRoW within the draft Order Limits and study area are '*local*', there is the King Charles III England Coast Path (a national trail, comprised of long-distance footpaths and bridleways in England and Wales) which is of national importance. Further detail on the numbers of PRoW and their location from the draft Order Limits will be incorporated into the ES following the evolution and refinement of the English Onshore Scheme design.
- 5.10.7 Tourist attractions typically comprise facilities such as museums, zoos and farm parks, heritage assets, country parks, theme parks, and points of interest. For the purposes of this assessment, beaches and nature reserves have also been included within the scope for tourist attractions, given the high volume of tourist visits within the region, and the likelihood of these being visited by tourist visitors from outside of the region, as well as

local residents. Anderby Creek Beach is a tourist attraction which falls within the draft Order Limits. There are a further 24 attractions of varying types within the 5 km study area. Whilst some of these are likely to be visited by local residents as well as tourists, many attractions (such as National Trust properties, Royal Society for the Protection of Birds and National Landscape designations, and beaches) are also likely to attract regional and national tourists.

- 5.10.8 Tourist accommodation typically comprises temporary, short term, accommodation. There are a number of hotels, guesthouses, campsites and holiday parks located within close proximity to the study area, most notably large caravan and camping pitches throughout the area, particularly closer to the coast. There are no tourist accommodation providers located within the draft Order Limits; however, 225 accommodation providers of varying types are situated within the 5 km study area.
- 5.10.9 Whilst there could be potential changes in future in relation to Socio-economics, Recreation and Tourism, it is considered that changes to the population and physical changes to the baseline environment over time are unlikely to change significantly should the English Onshore Scheme not proceed or be delayed. No demographic changes of significance are anticipated to arise in the period that the English Onshore Scheme is constructed and becomes operational.
- 5.10.10 A range of environmental measures would be implemented as part of the English Onshore Scheme. The preliminary assessment of Socio-economics, Recreation and Tourism effects assumes that all environmental measures are in place before assessing the effects.

Effects during Construction

- 5.10.11 The following receptors, which have the potential to experience likely significant effects and have been taken forward for preliminary assessment within the PEIR, and detailed assessment in the ES are:
- Working age residents in the local and regional study area – potential for significant effects relating to construction employment generation (direct, indirect, and induced).
 - Residents of private properties in the 500 m study area (there are no private properties within the draft Order Limits) – potential for significant effects relating to temporary disruption and delays to access, and amenity effects for residents.
 - Walkers, cyclists, and horse riders using PRoW and other designated routes in the draft Order Limits and the 500 m study area – potential for significant effects relating to temporary disruption or diversions, and amenity effects for users.
 - Visitors and users of tourist attractions in the 5 km study area – potential for significant effects relating to temporary disruption and delays to access, and amenity effects for visitors and users.
 - Users of tourist accommodation in the 5 km study area – potential for significant effects relating to temporary disruption and delays to access and amenity effects for visitors, and temporary reduction in the availability of tourist accommodation for visitors.
- 5.10.12 The full extent of potential likely significant effects cannot be assessed as this preliminary assessment stage due to limited information. The ES will provide an assessment of the significance of these effects once the full assessment is carried out and more detailed information is available.

5.10.13 The preliminary assessment has concluded:

- Assessment of gross construction employment generation is unable to determine whether there is the potential for a significant effect during construction. The ES chapter will provide a full assessment of the significance of the effects associated with employment generation taking account of the gross numbers of construction workers and the breakdown of net construction employee numbers per year.
- Potential likely significant adverse effects on tourist attractions cannot be determined at this stage. This effect will be revisited and assessed fully as part of the ES chapter.
- Potential likely significant effects during construction on residents of private properties, and walkers, cyclists, and horse riders using PRow cannot be determined at this stage. The ES will provide an assessment of the significance of the effect once the full assessment is carried out.

5.10.14 No assessment has been undertaken to estimate the proportion of construction workers who would live in the local or regional area and commute or who are likely to live outside of the local and regional area and require access to temporary tourist accommodation. This information is currently being reviewed by the NGET, with further analysis to follow in the ES.

Effects during Operation

5.10.15 At this stage no likely significant socio-economic, recreation and tourism effects have been identified during operation for the English Onshore Scheme. However, a full assessment has not been undertaken at PEIR and potential effects will be assessed fully within the ES.

5.11 Health and Wellbeing

5.11.1 A desk study has been undertaken to inform the preliminary assessment of health and wellbeing. The study area for the assessment of health and wellbeing comprises the draft Order Limits, as well as the local authority areas in which the English Onshore Scheme is located and has been defined using professional judgement and experience of similar linear projects. Where the assessment of health-related environmental change relies on data from other topic chapters, the study area for that chapter will be referred to in the assessment. The health and wellbeing study area is shown in **Volume 3, Part 2, Figure 16-1** of the PEIR.

5.11.2 Health and wellbeing statistics show a wide range of socioeconomic and health factors affecting different authorities across the study area. The study area is located within the East Lindsey local authority area. With the whole of the study area experiencing some level of fuel poverty and income deprivation, opportunities for improving income parity is explored within the Local Plan (Ref 5.4) document and Health and Wellbeing Strategy. Similarly, these local policy documents explore the potential expansion of community services to support the population in the most deprived areas.

5.11.3 The future baseline is not expected to materially change within the lifecycle of the Project.

5.11.4 Following the 2008 financial crisis, public spending cuts have reduced access to healthcare across England. The Covid-19 pandemic and subsequent cost of living crisis has further impacted people's lives by reducing access to recreational spaces and opportunities for adequate income. The pandemic has additionally increased the number of

people living with limiting illnesses or disabilities, and while these impacts have been witnessed nationwide, the study area is no exception.

- 5.11.5 A number of policies and strategies are in place across the study area, aiming to address health and wellbeing inequalities, ensure the provision of health services and access to outdoor recreational facilities and improve the mental health and resilience of the population.
- 5.11.6 A range of environmental measures would be implemented as part of the English On-shore Scheme. The preliminary assessment of health and wellbeing effects assumes that all environmental measures are in place before assessing the effects.
- 5.11.7 Potential effects to the physical and mental health of the general population and vulnerable populations have been considered in the assessment. Physical and mental health can be affected by changes within the local environment resulting from the Project, by changes to access to health, educational or recreational facilities (including PRow), or by the potential mental health impacts from stress associated with the construction and operation of the Project. Vulnerable populations are considered to be groups that may be more sensitive to changes from the Project due to factors such as age, race or ethnicity, socioeconomic position, disability and health status, sex, or gender.
- 5.11.8 The physical and mental health of local populations (including vulnerable people) could be impacted if, as result of the construction of the Project, there are impacts on local services and access to these services. The preliminary assessment has found effects are unlikely to be significant throughout construction and operation of the Project, as the Project has been carefully designed and located to avoid the loss of any educational, health or employment facilities. Access to these facilities could be slowed as a result of an increase in construction traffic, however traffic management measures would be put in place to ensure that access around the Project was maintained, and effects would be temporary.

Effects during Construction

- 5.11.9 The physical health of local populations can be affected by a number of impacts resulting from adverse effects from poor construction management, including construction dust, noise, pollution and contamination events, as described within other technical discipline chapters. The preliminary assessment found that these would all be managed in line with accepted guidance, which would result in no significant effects on human health. This will be reviewed during the production of the ES, as detailed construction noise and dust assessments are not yet available.
- 5.11.10 Adverse mental health effects could occur as a result of experiencing change of the local environment. This includes effects from changes in the landscape and to people's views, changes to water quality and flood risk, increased traffic flows and changes in noise levels and air quality as this may alter the amenity and character of the neighbourhood. The preliminary assessment has concluded that given the temporary nature of the construction works and measures to manage and control such effects, that overall effects on the general population and vulnerable groups are unlikely to be significant. However, this will be kept under review as part of the next steps of the Project as a full assessment of some of the environmental effects is not yet available. Further assessment will be undertaken once more detailed information on the construction programming is available, to identify if these effects could result in changes in local neighbourhoods which may impact the mental health of the general and vulnerable populations.

5.11.11 The assessment has also looked at how health and wellbeing could be impacted as a result of the Project's impacts on the PRow network and potential impacts on people using the network for recreation. At this stage of the Project, detailed information on how the PRow network could be impacted is not yet available. As outlined in Section 5.7 of this NTS, a number of measures will be put in place to minimise the impacts to people using PRow, including an Outline PRow Management Plan. Wherever possible, PRow will be kept open and measures such as temporary or permanent diversions put in place to ensure people can still use the network of PRow around the Project throughout the construction phases.

Effects during Operation

5.11.12 Concerns about the potential health effects are often raised when new electricity infrastructure is proposed in an area. The UK has a carefully thought-out set of policies for protecting us all against Electric and Magnetic Fields (EMFs), the main component of which is exposure guidelines. Those exposure guidelines are set by independent scientific bodies and are based on decades-long studies into the effects of EMFs and ill health. After decades of research, the weight of evidence is against there being any health risks of EMFs below the guideline limits. These policies are incorporated into the decision-making process for Development Consent for projects such as EGL 5 in National Policy Statement (NPS) EN-5 (Ref 5.5). These policies and guidelines are set to ensure people are protected against the effects of EMF. All the equipment which forms part of the Project will be fully compliant with these policies. This will be fully and publicly documented in the DCO submission.

5.11.13 It is recognised that concerns about EMFs may adversely impact some people's mental health by heightened anxiety. NGET provide open and transparent information about EMFs on the website www.emfs.info for members of the public to access, including what EMFs are, exposures from electricity infrastructure, research into health effects and the policies and guidelines in place to protect against EMF. An EMF helpline is also available to answer any questions or concerns about the subject and EMF specialists will be present at public consultation events, to address concerns and provide further information on EMFs and the measures in place to protect people, helping to reduce anxiety.

6. Preliminary Environmental Assessment – English Offshore Scheme

6.1 Coastal and Marine Physical Processes

- 6.1.1 **Volume 1, Part 3, Chapter 17: Coastal and Marine Physical Processes** of the PEIR contains the assessment of the potential impacts of the English Offshore Scheme on coastal and marine physical processes.
- 6.1.2 The study area is defined by a Zone of Influence (ZoI), based on project-specific modelling which extends to 19.8 km conservatively. This takes account of the tidal excursion (the average distance travelled by tidal flow between low-water slack tide and high-water slack tide).
- 6.1.3 The existing environment within the study area has been detailed through a range of publicly available and modelled data, incorporating project-specific survey data. The assessment focusses on:
- Hydrodynamics, including water levels, currents, waves and winds;
 - Geomorphology including coastal erosion, bathymetry, geology, surficial sediments and seabed features;
 - Sediment transport, including suspended sediments; and
 - Designated sites.
- 6.1.4 Measures embedded into the design of the English Offshore Scheme and control and management measures have been proposed to avoid and / or reduce impacts to coastal and marine physical processes. For example, external cable protection would only be installed where considered necessary for the safe operation of the English Offshore Scheme and the provision of management plans such as Outline Construction Environmental Management Plan (CEMP), Emergency Spill Response Plan, Waste Management Plan (WMP), Outline Marine Pollution Contingency Plan (MPCP) and Shipboard Oil Pollution Emergency Plan would minimise the risk of pollution.
- 6.1.5 The preliminary assessment of effects considered impacts associated with disturbance of subtidal seabed morphology and intertidal morphology, temporary increase in and deposition of suspended sediments, modifications to tidal and wave regimes and associated impacts to morphological features, release of contaminated sediments and temperature increases.
- 6.1.6 With the implementation of design and control and management measures, there is unlikely to be any significant effects upon coastal and marine physical processes receptors.

6.2 Intertidal and Subtidal Benthic Ecology

- 6.2.1 **Volume 1, Part 3, Chapter 18: Intertidal and Subtidal Benthic Ecology** of the PEIR contains the assessment of the potential impacts of the English Offshore Scheme on organisms living within or on the seabed (benthic organisms) and their supporting

habitats. Shellfish species (except for ocean quahog) are covered under the Fish and Shellfish Ecology assessment.

- 6.2.2 The study area for intertidal and subtidal benthic ecology extends 19.8 km and is based on the study area for the coastal and marine physical processes assessment.
- 6.2.3 The existing environment within the study area has been detailed through a range of publicly available and project-specific survey data. Habitat types identified within the study area are typical of the wider North Sea and are dominated by coarse and mixed sediment, with the presence of cobbles and boulders. Priority habitats and species have been identified within the study area including subtidal sands and gravel, stony reef, Ross worm reef, and ocean quahog.
- 6.2.4 Measures embedded into the design of the English Offshore Scheme and control and management measures have been proposed to avoid and / or reduce impacts to intertidal and benthic ecology receptors. For example, external cable protection would only be installed where considered necessary for the safe operation of the English Offshore Scheme and a trenchless solution at the Landfall, such as Horizontal Directional Drilling would be used to avoid disturbance to intertidal habitats.
- 6.2.5 The preliminary assessment of effects identifies several potential effects on intertidal and subtidal benthic ecology across different project phases, including temporary and permanent habitat loss, temporary increase in suspended sediments, mobilisation of sediment-bound contamination, underwater noise disturbance, introduction of marine invasive non-native species and electromagnetic and thermal (heat) changes.
- 6.2.6 With the implementation of design and control and management measures, there is unlikely to be any significant effects upon intertidal and benthic ecology receptors.

6.3 Fish and Shellfish

- 6.3.1 **Volume 1, Part 3, Chapter 19: Fish and Shellfish** of the PEIR contains the assessment of the potential impacts of the English Offshore Scheme on fish and shellfish including marine species, diadromous species (species which migrate between freshwater and marine environments), elasmobranchs (sharks, rays and skates), and shellfish (crustaceans and molluscs).
- 6.3.2 The study area for fish and shellfish extends 19.8 km and is based on the study area for the coastal and marine physical processes assessment.
- 6.3.3 The existing environment within the study area has been detailed through a range of publicly available and project-specific survey data. A wide range of fish and shellfish species are expected to inhabit the study area such as sprat, haddock, whiting, herring haddock, whelk, crab, lobster and scallops.
- 6.3.4 Measures embedded into the design of the English Offshore Scheme and control and management measures have been proposed to avoid and / or reduce impacts to fish and shellfish receptors. For example, external cable protection would only be installed where considered necessary for the safe operation of the English Offshore Scheme and cables would be bundled to minimise the effects of Electromagnetic Fields (EMF) for sensitive fish species.
- 6.3.5 The preliminary assessment of effects identifies several potential impacts on fish and shellfish across different project phases, including temporary and permanent habitat loss, temporary increase in suspended sediments, underwater noise disturbance and electromagnetic and thermal (heat) changes.

6.3.6 With the implementation of design and control and management measures, there is unlikely to be any significant effects upon intertidal and benthic ecology receptors.

6.4 Intertidal and Offshore Ornithology

6.4.1 **Volume 1, Part 3, Chapter 20: Intertidal and Offshore Ornithology** of the PEIR contains the assessment of the potential impacts of the English Offshore Scheme on intertidal and offshore ornithology (seabirds).

6.4.2 The study area used in the intertidal and offshore ornithology assessment was defined taking account of the likely ZoI over which the English Offshore Scheme could have potential impacts and extends to 19.8 km and considered:

- Seabird foraging ranges;
- Recent recommendations from statutory nature conservation bodies regarding maximum disturbance/displacement ranges for sensitive bird species; and
- Maximum tidal excursion to encompass the potential impact pathway from increased sediment concentrations, which could affect a bird's ability to seek prey.

6.4.3 The existing environment within the study area has been detailed through a range of publicly available data, project-specific survey data at the Landfall and stakeholder consultation. The Landfall and part of the English Offshore Scheme lies within the Greater Wash SPA an internationally important nature conservation site for over wintering red throated diver, common scoter and little gull; and breeding common tern, little tern and Sandwich tern.

6.4.4 Measures embedded into the design of the English Offshore Scheme and control and management measures have been proposed to avoid and / or reduce impacts to intertidal and offshore ornithology. For example, a trenchless solution and the Landfall, such as Horizontal Directional Drilling would be used to avoid disturbance to intertidal and wading birds and the use of existing shipping lanes to avoid additional disturbance to seabirds.

6.4.5 The preliminary assessment of effects considered impacts due to temporary increase and deposition of suspended sediments, changes in distribution of prey species and visual and physical disturbance or displacement.

6.4.6 With the implementation of design and control and management measures, there is unlikely to be any significant effects upon intertidal and offshore ornithology.

6.5 Marine Mammals and Marine Reptiles

6.5.1 **Volume 1, Part 3, Chapter 21: Marine Mammals and Marine Reptiles** of the PEIR contains the assessment of the potential impacts of the English Offshore Scheme on marine mammals including cetaceans (whales, dolphins, porpoises), pinnipeds (seals), and the European otter.

6.5.2 The study area used in the marine mammal assessment varies by species due to their highly mobile and transient behaviour. The study area for these species has been identified according to their mobility and geographic range and using defined Management Units established by the Inter-Agency Marine Mammal Working Group (IAMMWG) (which comprises representatives from the UK Statutory Nature Conservation Bodies (SNCDs) i.e., Natural England, NatureScot, Natural Resources Wales and the Department of Agriculture, Environment and Rural Affairs).

- 6.5.3 The existing environment within the study area has been detailed through a range of publicly available data, marine mammal sightings data recorded during the English Offshore Scheme geophysical survey and stakeholder consultations.
- 6.5.4 Within the waters of the English Offshore Scheme, three cetacean species are regularly recorded, the harbour porpoise, white-beaked dolphin and common minke whale. There are six other species (common dolphin, bottlenose dolphin, fin whale, sperm whale, killer whale and humpback whale) that are considered regular but less common. Two species of pinniped are resident in UK waters: grey seal and common (or harbour seal), and both are present in the study area. European otter, although largely terrestrial (i.e., onshore or inland) can inhabit coastal areas and are known to forage in a narrow zone close to shore (<80 m), but sightings around the Landfall are rare.
- 6.5.5 The study area includes a number of sites designated for the protection of marine mammals and extends through the Southern North Sea SAC designated for harbour porpoise. Designated sites for marine mammals have been considered within the Habitats Regulations Assessment.
- 6.5.6 Measures embedded into the design of the English Offshore Scheme and control and management measures have been proposed to avoid and / or reduce impacts to marine mammals and marine reptiles. For example, an Outline Marine Mammal Mitigation Plan (MMMP) will be produced which will outline measures to be implemented to comply with legislation and best industry practice e.g., implementation of Joint Nature Conservation Committee (JNCC) guidance to reduce impacts on marine mammals from underwater noise during geophysical surveys, during all phases of the English Offshore Scheme.
- 6.5.7 The preliminary assessment of effects considered impacts in changes in prey availability, underwater noise changes, collision with English Offshore Scheme vessels and visual disturbance to seals and otter at locations on land where they come ashore to rest or breed.
- 6.5.8 With the implementation of design and control and management measures, there is unlikely to be any significant effects upon marine mammals and marine reptiles.

6.6 Shipping and Navigation

- 6.6.1 **Volume 2, Part 3, Chapter 22: Shipping and Navigation** of the PEIR contains the assessment of potential impacts of the English Offshore Scheme on shipping and navigation and is informed by a Navigation Risk Assessment (NRA) which identifies and assesses potential hazards affecting vessel navigation.
- 6.6.2 The study area for shipping and navigation extends 5 NM (9.26 km) on each side of the draft Order Limits. It represents a precautionary study area that considers all shipping patterns and navigational features that may interact with the English Offshore Scheme.
- 6.6.3 The existing environment within the study area has been detailed through a range of publicly available and purchased Automatic Identification System (automated vessel tracking systems) data and stakeholder consultation. The study area is utilised primarily by cargo and tanker vessels, with recreational vessel activity widespread and passenger vessels traffic (such as ferries) relatively low. Highest vessel densities were recorded at the Humber Estuary and Whitby Port.
- 6.6.4 Measures embedded into the design of the English Offshore Scheme and control and management measures have been proposed to avoid and / or reduce impacts to shipping and navigation. For example, information on the English Offshore Scheme will be

communicated to other sea users via best practice measures such as Notice to Mariners and navigational warnings and procedures would be established to minimise disruption near high density shipping areas.

- 6.6.5 The preliminary assessment of effects considered increased risk of vessel collisions, disruption / reduced access to established vessel routes, areas and activities, accidental anchor strike or drag, accidental fishing gear snagging, reduction in under-keel clearance (distance between vessel hull and seabed) and interference with marine navigation, communications and position fixing equipment.
- 6.6.6 The preliminary assessment identified effects with an unacceptable risk level including disturbance to existing shipping and fishing activities, and temporary obstruction of navigational features by English Offshore Scheme vessels. As a result, additional risk-reduction measures are required to reduce the risk to As Low as Reasonably Practicable (ALARP). With the implementation of design and control and management measures, all other risks were considered tolerable or ALARP and will not result in significant effects upon shipping and navigation.

6.7 Commercial Fisheries

- 6.7.1 **Volume 1, Part 3, Chapter 23: Commercial Fisheries** of the PEIR contains the assessment of the potential impacts of the English Offshore Scheme on static, dredge, demersal seine, beam trawl, demersal trawl and pelagic trawl gear types.
- 6.7.2 The study area for commercial fisheries is defined by fisheries management rectangles outlined by the International Council for the Exploration of the Sea (ICES), in which the English Offshore Scheme lies. Each Rectangle is approximately 30 NM wide and is 30 min latitude and 1° longitude in size and is used to record and collate statistical fisheries data (ICES, 2022). The study area lies within ICES Area IVc (Southern North Sea) IVb (Greater North Sea) and consists of the following 12 ICES rectangles: 35F0, 36F0, 36F1, 37F0, 38E9, 38F0, 39E9, 39F0, 40E9, 40F0, 41E9, and 42E9.
- 6.7.3 The existing environment within the study area has been detailed through a range of publicly available data including annual sea fisheries statistics and vessel data. Key commercial species landed in the study area include those such as crab, lobster, haddock, halibut and herring.
- 6.7.4 Measures embedded into the design of the English Offshore Scheme and control and management measures have been proposed to avoid and / or reduce impacts to commercial fisheries. For example, Notice to Mariners (weekly updates with the latest safety critical navigational information) in advance of any works; provision of a Fisheries Liaison and Coexistence Plan; and where possible, burial of the cables will be undertaken to avoid changes to substrate and creation of snagging risks.
- 6.7.5 The preliminary assessment of effects considered impacts due to temporary restricted access to fishing grounds, temporary and permanent displacement of fishing activity into other areas and temporary increase and deposition of suspended sediments.
- 6.7.6 With the implementation of design and control and management measures, there will be no significant effects upon commercial fisheries.

6.8 Other Marine Users

- 6.8.1 **Volume 1, Part 3, Chapter 24: Other Marine Users** of the PEIR contains the assessment of the potential impacts of the English Offshore Scheme on other marine users.
- 6.8.2 The study area for other marine users extends 5 NM (9.26 km) on each side of the draft Order Limits. The area affected on the seabed is relatively small, however other marine users may be impacted by vessels; therefore, the study area aligns with the shipping and navigation study area.
- 6.8.3 The existing environment within the study area has been based on a range of publicly available data sources and identifies the following other marine users within the study area:
- Offshore wind farms;
 - Other power and telecommunication cables;
 - Carbon capture and storage and natural gas storage sites;
 - Disposal sites;
 - Aggregate extraction sites;
 - Chemical weapon and munitions disposal sites;
 - Ministry of Defence Practice Exercise Areas;
 - Oil and gas operations;
 - Recreational activities;
 - Angling; and
 - Recreational users such as recreational swimmers and scuba divers.
- 6.8.4 Measures embedded into the design of the English Offshore Scheme and control and management measures have been proposed to avoid and / or reduce impacts to other marine users. For example, owners / operators / licence holders of other infrastructure will be consulted and legal agreements or procedures will be developed and relevant information on the English Offshore Scheme will be communicated to other sea users via best practice measures such as Notice to Mariners and navigational warnings.
- 6.8.5 The preliminary assessment of effects considered impacts due to occupancy of the seabed by the English Offshore Scheme, restricted access to recreational areas, interaction with aircraft using practice and military exercise areas.
- 6.8.6 With the implementation of design and control and management measures, there is unlikely to be any significant effects upon other marine users.

6.9 Marine Archaeology

- 6.9.1 **Volume 1, Part 3, Chapter 25: Marine Archaeology** of the PEIR contains the assessment of potential impacts of the English Offshore Scheme on marine archaeology including submerged prehistoric and palaeolandscape remains (i.e. landforms and geological units representing formally terrestrial (onshore) landscapes now submerged and archaeological remains related to human occupation of those landscapes), coastal and maritime remains and aviation remains.

- 6.9.2 The study area for the marine archaeology assessment extends 2 km around the draft Order Limits. The area affected on the seabed is relatively small, however marine archaeology receptors may be impacted indirectly by the English Offshore Scheme.

The existing environment has been detailed through a range of publicly available and purchased data as well as project-specific surveys and stakeholder consultation. The study area is characterised by a variety of marine archaeological records such as wreck sites, seabed obstructions, artefact find spots, earthwork monuments, structures and paleoenvironmental features.

- 6.9.3 Measures embedded into the design of the English Offshore Scheme and control and management measures have been proposed to avoid and / or reduce impacts to marine archaeology. For example, the preparation of an Outline Written Scheme of Investigation (WSI) and Protocol for Archaeological Discoveries (PAD) which will detail the strategy, methodology and scope of archaeological works and the implementation of Archaeological Exclusion Zones (AEZs) to avoid direct impacts to known archaeological features.
- 6.9.4 The preliminary assessment of effects considered impacts to known archaeological sites and geophysical anomalies or archaeological potential, unknown archaeological sites and remains and paleoenvironmental features.
- 6.9.5 With the implementation of design and control and management measures, there will be no significant effects to marine archaeology.

7. Project Wide Effects

7.1 Greenhouse Gases

- 7.1.1 This assessment considers the effects of greenhouse gas (GHG) emissions arising from the operation of the Project on the global climate.
- 7.1.2 The in-combination climate change impact (ICCI) assessment, which considers the extent to which climate change exacerbates effects on receptors identified in the other aspect chapters, is described in each relevant chapter. For example, the assessment of effects on water and flood risk will take into account how future changes in the climate and rainfall could affect the likelihood of flooding.
- 7.1.3 The assessment will consider the likely significant effects of GHG emissions associated with the Project on the Global Climate. However, at this stage of the design process, there is uncertainty as to the location and spatial extent of key design elements associated with the Project.
- 7.1.4 In general terms, the activities that will cause GHG emissions relate to the quantities of materials used, the manufacture and transport of those materials to the sites and the construction of the Project (associated plant equipment and resource use).
- 7.1.5 Leakage of sulphur hexafluoride (SF₆) used within switchgear equipment in substations is a potential source of greenhouse gas emissions during the operational lifetime of the Project. NGET has a Network Asset Risk Metric (NARM) framework in place. The NARM framework determines whether equipment intervention is required to reduce leakages.
- 7.1.6 The operation of the Project will have a lower impact than the construction stage, given minimal maintenance/repair requirements and no significant fuel or water requirements in operation.
- 7.1.7 An Outline CoCP will be produced, which sets out measures to be implemented, such as goals to reduce embodied carbon in construction materials and therefore reduce GHG emissions and encouragement of circular economy principles during construction. The Outline CoCP will also include measures such as consolidating deliveries where possible and policies such as 'no idling'. These measures will seek to minimise the GHG emissions associated with construction traffic.
- 7.1.8 Consideration of the significance of GHG emissions from the Project is determined based on criteria developed from guidance produced by The Institute of Sustainability and Environmental Professionals (ISEP, formerly the Institute of Environmental Management and Assessment (IEMA)) (Ref 7.1). The significance of greenhouse gas emissions associated with the Project is evaluated based on the extent to which the Project materially affects the ability to achieve national targets for decarbonisation. This is considered against the UK carbon budgets, including the relevant Climate Change Committee (CCC) sectoral allocations and the UK carbon target of 'net zero' in 2050.
- 7.1.9 At ES stage, when a more developed design proposal is in place, a quantified assessment of significance will be undertaken. This will be a 'worst-case' scenario since it will incorporate an estimated bill of quantities (i.e. an estimate of the quantity of specific materials to build and operate the Project) and model primary activities as set out in an indicative schedule.

- 7.1.10 The contributions of greenhouse gas emissions from the Project has been qualitatively considered in the context of regional territorial greenhouse gas emissions. This point of comparison shows that if construction emissions reached 1% of the UK Carbon Budget, then the total greenhouse gas emissions would be half of those for Lincolnshire and the East Midlands combined. In practice, good design and construction practice mean emissions will be much lower.
- 7.1.11 Given that GHG emissions during operation will be much lower than those in construction, the preliminary assessment of the impacts of the Project is that these will not be of a sufficient scale to impact the overall trajectory of the UK's net zero targets. This is assessed as a minor (adverse) effect and therefore, not significant.

7.2 Cumulative Effects

- 7.2.1 The approach to the Cumulative Effects Assessment (CEA) will follow the advice and guidance provided by the Planning Inspectorate (Ref 7.2) and will be discussed with the relevant local planning authorities. The assessment will consider the following types of effects:
- **Inter-project cumulative effects** (referred to as 'cumulative effects with other existing and, or approved development' (Ref 7.2)) are the residual environmental effects of the Project combining and interacting with the residual environmental effects of other committed development(s), affecting the same receptor. For example, effects upon users of the local road network because of traffic flows from the Project and traffic flows from a nearby committed industrial development.
 - **Intra-project cumulative effects** (referred to as 'inter-relationships between aspects' (Ref 7.2)) are potential likely significant effects resulting from the interaction of a combination of different residual environmental effects, which on their own are not significant, but could combine with other environmental aspects to create a significant effect on a receptor. For example, visual and noise effects during construction affecting users of a nearby PRow would be assessed in the Health and Wellbeing chapter.
- 7.2.2 Further details of the CEA can be found in **Volume 1, Part 4, Chapter 27: Cumulative Effects Assessment** of the PEIR.
- 7.2.3 At this stage of the Project, a review of planning applications, including those in relation to Nationally Significant Infrastructure Projects, planning permissions, other relevant information and site allocations in relevant Local Development Plans has been undertaken across a defined geographical area. These have been collated into a 'long list' which has then been reviewed to identify a 'short list' of potential developments which will be assessed in further detail as part of the ES.
- 7.2.4 The long list of cumulative developments is presented within **Volume 2, Part 4, Appendix 27.A: Long List of Other Developments** and shown in **Volume 3, Part 4, Figure 27-1** of the PEIR.
- 7.2.5 The short list will be discussed and agreed with local planning authorities and any additional projects suggested by them, included in the short list. The short list of other developments is set out in **Volume 2, Part 4, Appendix 27.A: Long List of Other Developments** and shown in **Volume 3, Part 4, Figure 27-2** of the PEIR.
- 7.2.6 Identifying the Project's ZoI and establishing the long list and short list (Stages 1 and 2) are the stages which have been completed for the PEIR. Stages 3 (Information gathering)

and Stages 4 (Assessment of Other Developments) will be undertaken and presented in the cumulative effects chapter of the ES.

- 7.2.7 As outlined in Section 1 of this NTS, EGL 5 is a proposed new electrical connection being developed to reinforce the electricity transmission system between Scotland and England. However, the PEIR and this NTS specifically relate to the English components of EGL 5. Where the construction crosses from one jurisdiction to the next, e.g. English to Scottish waters, there will be a continuation of effects along the linear project. These effects will be assessed as part of the assessment of intra-project cumulative effects and are likely to be limited in spatial extent in proximity to the English - Scottish boundary and are not considered to be significant. The potential for intra-project cumulative effects will continue to be considered and where required, will be reported in the ES.

8. Next Steps

8.1 What happens next?

- 8.1.1 The EGL 5 statutory public consultation runs from 12 noon on 29 May 2026 to 11.59 pm on 24 July 2026. NGET wants to hear the views of local people as well as organisations, such as Natural England and the local planning authorities (known as non-statutory and statutory consultees). Once consultation is complete, NGET will consider all comments that have been received. These consultation responses will inform further design refinements and proposals for environmental measures to reduce impacts from the Project. NGET will continue to look at where there are options in the design and undertake further work to identify which options should stay in the design.
- 8.1.2 Based on consultation responses, design refinements and additional information that becomes available from site visits and surveys, the environmental assessment will be reviewed and updated for the final ES. It is expected that the ES to accompany the DCO application will be submitted in 2027.

8.2 What if I would like further information?

- 8.2.1 This document is a non-technical summary of the PEIR for the Project. The full PEIR, which provides more detailed and technical information is available to view on the following link: [Eastern Green Link 5 | National Grid](#)
- 8.2.2 A number of public information events will take place during the consultation period for members of the public to attend and find out more information about the Project, as listed in **Table 8-1**. Copies of our maps and technical documents, including the PEIR, will be available to view at these events.

Table 8-1 Public information events

Location	Date	Address
Alford Corn Exchange	06 June 2026	9 Market Place Alford LN13 9EB
Anderby Village Hall	11 June 2026	Sea Road Anderby PE24 5YE
Huttoft Village Hall	13 June 2026	Sutton Road Huttoft LN13 9RG

Location	Date	Address
Huttoft Village Hall	18 June 2026	Sutton Road Huttoft LN13 9RG

- 8.2.3 An online consultation exhibit will be provided alongside a series of videos that will detail all aspects of the Project. Details on how to access the consultation exhibit and videos are available on the website linked below.
- 8.2.4 You can also book a ‘team call-back’ session with the Project team by contacting the number below.
- 8.2.5 If you have any questions, contact NGET or visit the dedicated Project website, where you can view the consultation materials, give feedback and learn more about the consultation events and proposals. Alternatively, you can view paper copies of consultation materials at the local information points.
- 8.2.6 For more information see the Project website, or get in touch via the contact details below:
- Website: [Eastern Green Link 5 | National Grid](#)
 - Email: contactegl5@nationalgrid.com
 - Freephone line: 0800 358 4817 (Mon-Fri, 9am-5pm)
 - Write to: **Freepost EGL 5**

9. Bibliography

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