

Outer Dowsing Offshore Wind

Preliminary Environmental Information Report

6.1 Non-Technical Summary

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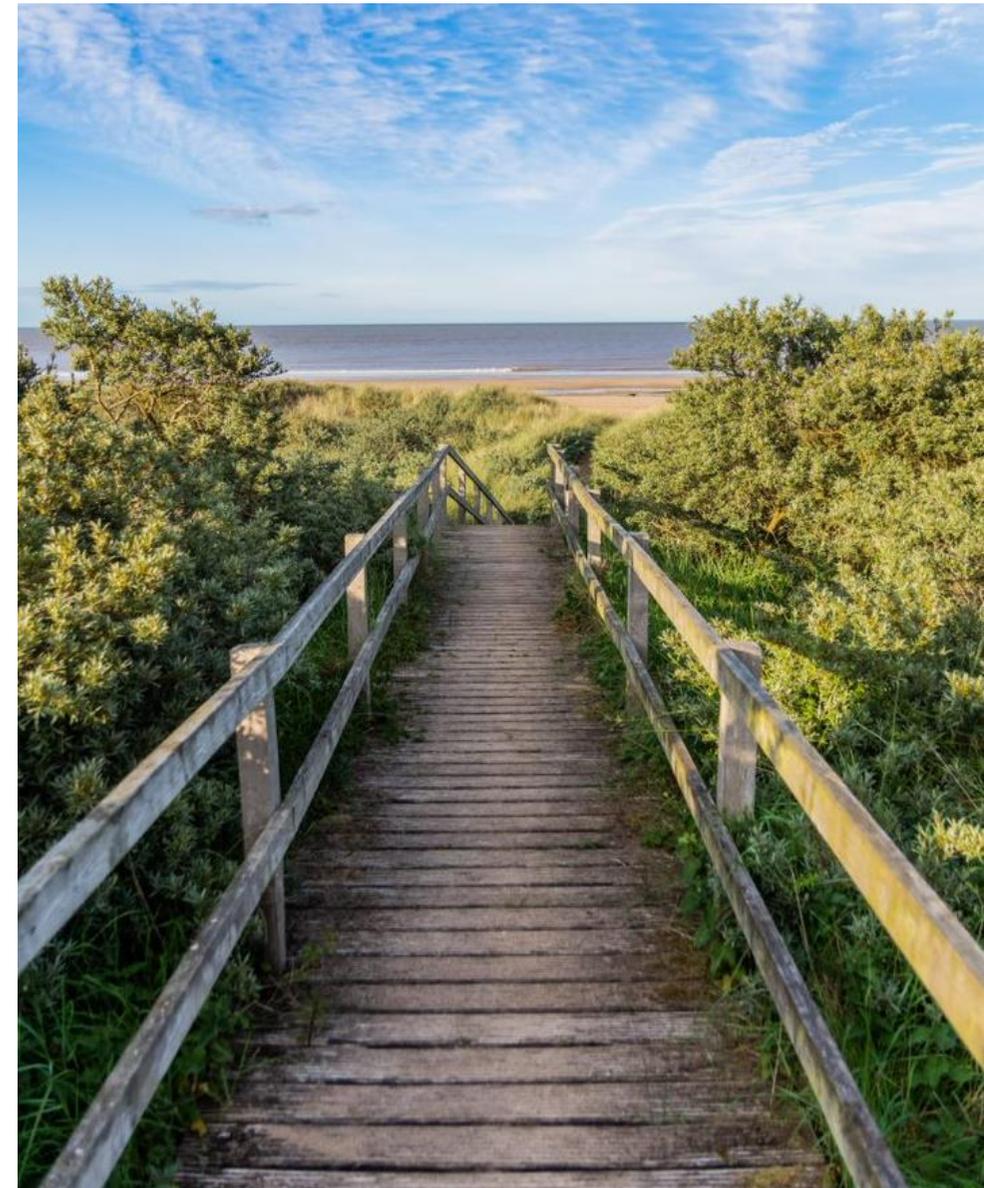
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Abbreviations

Acronym	Expanded name
BEIS	Department for Business, Energy & Industrial Strategy (now the Department for Energy Security and Net Zero (DESNZ))
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
ECC	Export Cable Corridor (offshore ECC or indicative onshore ECC)
EIA	Environmental Impact Assessment
ES	Environmental Statement
GB	Great Britain
GW	Giga Watt
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
MW	Mega Watt
NGESO	National Grid Electricity System Operator
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NTS	Non-Technical Summary
ODOW	Outer Dowsing Offshore Wind (The Project)
OTNR	Offshore Transmission Network Review
PEIR	Preliminary Environmental Information Report
SPA	Special Protection Area
UK	United Kingdom



Terminology

Term	Definition
Array area	The area offshore within the PEIR Boundary within which the generating stations (including wind turbine generators (WTG) and inter array cables), offshore accommodation platforms, offshore transformer substations and associated cabling are positioned.
Baseline	The status of the environment at the time of assessment without the development in place.
Project Design envelope	A description of the range of possible elements that make up the Project’s design options under consideration, as set out in detail in the project description. This envelope is used to define the Project for Environmental Impact Assessment (EIA) purposes when the exact engineering parameters are not yet known. This is also often referred to as the “Rochdale Envelope” approach.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP) from the Secretary of State (SoS) for Department for Energy Security and Net Zero (DESNZ).
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the Environmental Impact Assessment (EIA) Regulations, including the publication of an Environmental Statement (ES).
EIA Regulations	Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

Term	Definition
Environmental Statement (ES)	The suite of documents that detail the processes and results of the Environmental Impact Assessment (EIA).
Habitats Regulations Assessment (HRA)	Habitats Regulations Assessment. A process which helps determine likely significant effects and (where appropriate) assesses adverse impacts on the integrity of European conservation sites and Ramsar sites. The process consists of up to four stages of assessment: screening, appropriate assessment, assessment of alternative solutions and assessment of imperative reasons of overriding public interest (IROPI) and compensatory measures.
Haul Road	The track within the onshore ECC which the construction traffic would use to facilitate construction.
High Voltage Alternating Current (HVAC)	High voltage alternating current is the bulk transmission of electricity by alternating current (AC), whereby the flow of electric charge periodically reverses direction.
High Voltage Direct Current (HVDC)	High voltage direct current is the bulk transmission of electricity by direct current (DC), whereby the flow of electric charge is in one direction.
Indicative Working Width	The indicative working width within the Export Cable Corridor (ECC), required for the construction of the onshore cable route.
Inter-array cables	Cable which connects the wind turbines to each other and to the offshore substation(s).
Intertidal	Area where the ocean meets the land between high and low tides.
Joint bays	A joint bay provides a secure environment for the assembly of cable joints as well as bonding and

Term	Definition
	earthing leads. A joint bay is installed between each length of cable.
Landfall	The location at the land-sea interface where the offshore export cable will come ashore.
Maximum Design Scenario	The maximum design parameters of the combined project assets that result in the greatest potential for change in relation to each impact assessed
Mitigation	Mitigation measures, or commitments, are commitments made by the Project to reduce and/or eliminate the potential for significant effects to arise as a result of the Project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.
National Grid's OnSS	Onshore substation which is owned and operated by National Grid
National Policy Statement (NPS)	A document setting out national policy against which proposals for Nationally Significant Infrastructure Projects (NSIPs) will be assessed and decided upon
Offshore Export Cable Corridor (ECC)	The Offshore Export Cable Corridor (Offshore ECC) is the area within the Preliminary Environmental Information Report (PEIR) Boundary within which the export cable running from the array to landfall will be situated.
Offshore Substation (OSS)	Platforms located within the array area which house electrical equipment and control and instrumentation systems. They also provide access facilities for work boats and helicopters.
Onshore Export Cable Corridor (ECC)	The Onshore Export Cable Corridor is the area within which the export cable running from the landfall to the onshore substation will be situated.

Term	Definition
Onshore substation (OnSS)	The Project's onshore substation, containing electrical equipment to enable connection to the National Grid
Onshore Infrastructure	The combined name for all onshore infrastructure associated with the
Outer Dowsing Offshore Wind (ODOW)	The Project.
Preliminary Environmental Information Report (PEIR)	The PEIR is written in the style of a draft Environmental Statement (ES) and provides information to support and inform the statutory consultation process in the pre-application phase. Following that consultation, the PEIR documentation will be updated to produce the Project's ES that will accompany the application for the Development Consent Order (DCO).
Pre-construction and post-construction	The phases of the Project before and after construction takes place.
PEIR Boundary	The PEIR Boundary is outlined in Figure 1.1 (of the PEIR) and comprises the extent of the land and/or seabed for which the PEIR assessments are based upon.
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of receptors include species (or groups) of animals or plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.
study area	Area(s) within which environmental impact may occur – to be defined on a receptor by receptor basis by the relevant technical specialist.

Term	Definition
The Planning Inspectorate	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
The Project	Outer Dowsing Offshore Wind including proposed onshore and offshore infrastructure
Transition Joint Bay (TJBs)	The offshore and onshore cable circuits are jointed on the landward side of the sea defences/beach in a Transition Joint Bay (TJB). The TJB is an underground chamber constructed of reinforced concrete which provides a secure and stable environment for the cable.
Trenchless technique	Trenchless technology is an underground construction method of installing, repairing and renewing underground pipes, ducts and cables using techniques which minimize or eliminate the need for excavation. Trenchless technologies involve methods of new pipe installation with minimum surface and environmental disruptions. These techniques may include Horizontal Directional Drilling (HDD), thrust boring, auger boring, and pipe ramming, which allow ducts to be installed under an obstruction without breaking open the ground and digging a trench.
Trenched technique	Trenching is a construction excavation technique that involves digging a narrow trench in the ground for the installation, maintenance, or inspection of pipelines, conduits, or cables.
Subsea	Subsea comprises everything existing or occurring below the surface of the sea.
Wind turbine generator (WTG)	All the components of a wind turbine, including the tower, nacelle, and rotor.

1 Introduction

1.1 Purpose of the Document

1.1.1 This document is the Non-Technical Summary (NTS) of the Preliminary Environmental Information Report (PEIR) for Outer Dowsing Offshore Wind ('the Project'). The purpose of this NTS is to provide a high level overview of the Project, the site selection process and the key findings of the Environmental Impact Assessment (EIA) process to date. For further information and the full assessment, please refer to the PEIR.

1.1.2 The purpose of the EIA is to allow stakeholders to develop an informed view of the impacts of the development. The Project is a Nationally Significant Infrastructure Project (NSIP) and therefore requires a Development Consent Order (DCO) to construct, operate and decommission the Project.

1.1.3 The PEIR provides the environmental information which has been gathered to carry out an assessment of the likely significant effects upon the receiving environment as a result of the construction, operation and decommissioning of the Project. An Environmental Statement (ES) will be prepared detailing the finalised EIA findings for the Project and will be informed by stakeholder responses to the PEIR. The ES will accompany the application for a Development Consent Order (DCO).

1.1.4 The Project considers the pre-application consultation with the local community and stakeholders to be an integral part of the development process and looks forward to hearing your views on the refinement of our proposals so far.

1.1.5 The full PEIR can be downloaded from:

<https://www.outerdowsing.com/phase-2-consultation/>

Consultation Timeline

1.1.6 The PEIR marks the start of the Project's Phase 2 Consultation, which follows on from two previous phases of consultation (Phase 1 and Phase 1A).

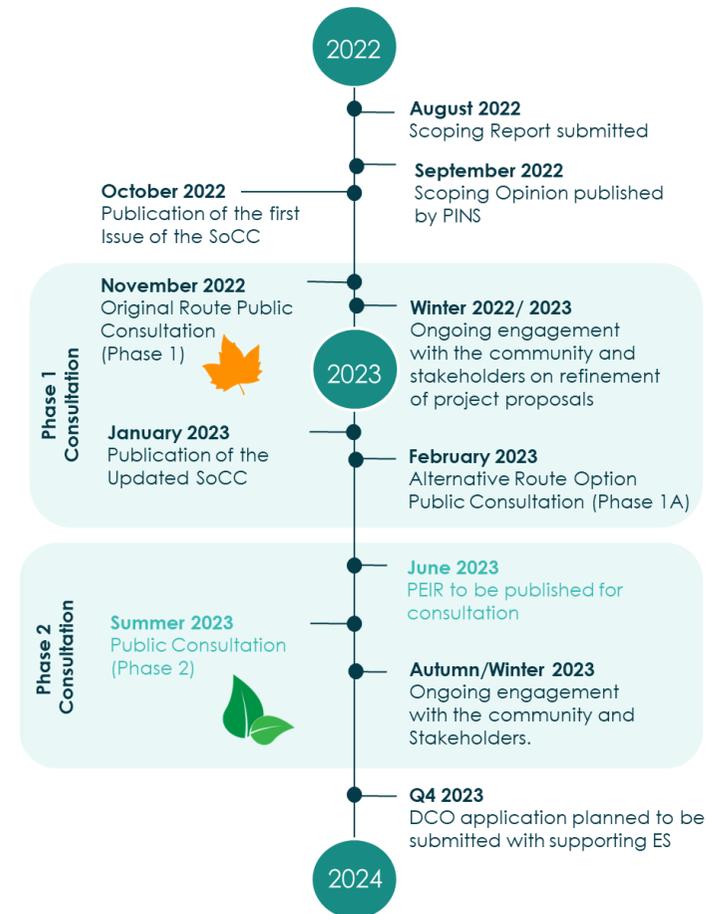


Figure 1.1 Project Consultation Timeline

2 Project Background

2.1 The Project

2.1.1 The Project is a proposed offshore windfarm located approximately 54km off the coast of Lincolnshire, England. The Project will require both offshore and onshore infrastructure to transmit the power generated by the wind turbines to an onshore substation and subsequently into the National Grid Transmission System.

2.1.2 Full details on the Project Design can be found in PEIR Volume 1 Chapter 3 Project Description (PEIR document 6.1.3).

2.1.3 The Project's design is still in the development phases and therefore to assess a "worst case scenario", the PEIR is based on the Project's Maximum Design Scenario (MDS). The MDS is the maximum anticipated extent of the Project's infrastructure in terms of both footprint and physical presence both during construction, operation and that anticipated for decommissioning. The purpose of defining an MDS is to ensure the Project has both identified and consulted upon any potentially significant effects of the Project.

2.1.4 The aim of the PEIR and subsequent ES is to highlight these and any other adverse (negative) effects that have resulted from the EIA to date, identify how these might be mitigated and how the mitigation is intended to be secured (this means the Project's DCO, once granted, would ensure the Project could only be built subject to the mitigation measures being adhered to). The purpose of the Phase 2 consultation is to consult with stakeholders and the local communities on the preliminary results of the EIA, and any mitigation measure proposed.

2.2 Who we are

2.2.1 The Applicant is GTR4 Limited, a joint venture between Corio Generation (a Green Investment Group (GIG) portfolio company), TotalEnergies (a global multi-energy company) and Gulf Energy (one of Thailand's largest private power producers) together trading as Outer Dowsing Offshore Wind (ODOW).



TotalEnergies is a global multi-energy company that produces and markets energies: oil and biofuels, natural gas and green gases, renewables and electricity.



Corio Generation is a Green Investment Group (GIG) portfolio company, operating on a standalone basis. GIG is a specialist green investor within Macquarie Asset Management, part of Macquarie Group.



Gulf Energy is a reputable publicly listed company based in Thailand and they bring a strong track record in offshore wind through their involvement in Borkum Riffgrund 2 in Germany (partnering with Ørsted) and development of their Ben Tre offshore wind farm in Vietnam.

2.3 Need for the Project

2.3.1 The need for the Project arises from the United Kingdom’s (UK) Government’s ambition to deliver 50GW of renewable energy from offshore wind by 2030.

2.3.2 As part of this strategy, investing in offshore wind generation has been listed as one of the UK Government’s ‘10 Point Plan’, contributing to a carbon net zero by 2050. The British Energy Security Strategy is anticipated to support 90,000 jobs in offshore wind by 2028, with a goal of accelerating offshore wind deployment, ensure energy security and stabilise consumer prices in the longer term.

2.3.3 The Project represents an essential contribution to the 50GW by 2030 ambition set by the UK, with the development programme focused on ensuring the Project is generating by 2030.

2.3.4 As discussed in the strategies and government incentives above, offshore wind projects such as the Project, offer the UK a wide range of additional benefits including economic growth, energy security and decarbonisation. To summarise, there are four primary drivers for the development of offshore wind energy to which the Project would make a contribution:

- The need to reduce greenhouse gas emissions, in line with the UK Government's strategy to reach net zero emissions across the economy by 2050 and meet its statutory target for a 100% reduction over 1990 emission levels by the same date;
- The need for national energy security, with reduced reliance on fossil fuels, reliance on imported energy and exposure to volatile global wholesale energy prices;
- The need to maximise economic opportunities from energy infrastructure investment for the UK; and
- The need to produce affordable energy.



Up to 1.5GW of clean electricity



Powering over 1.6 million UK households



Displacing nearly 2 million tonnes of CO₂ per year



Equivalent to removing over 650,000 petrol cars from the road



Contributing to Net Zero by 2050



Offshore wind is one of the cheapest forms of new electricity generation



Project Overview schematic (N.B. not to scale)

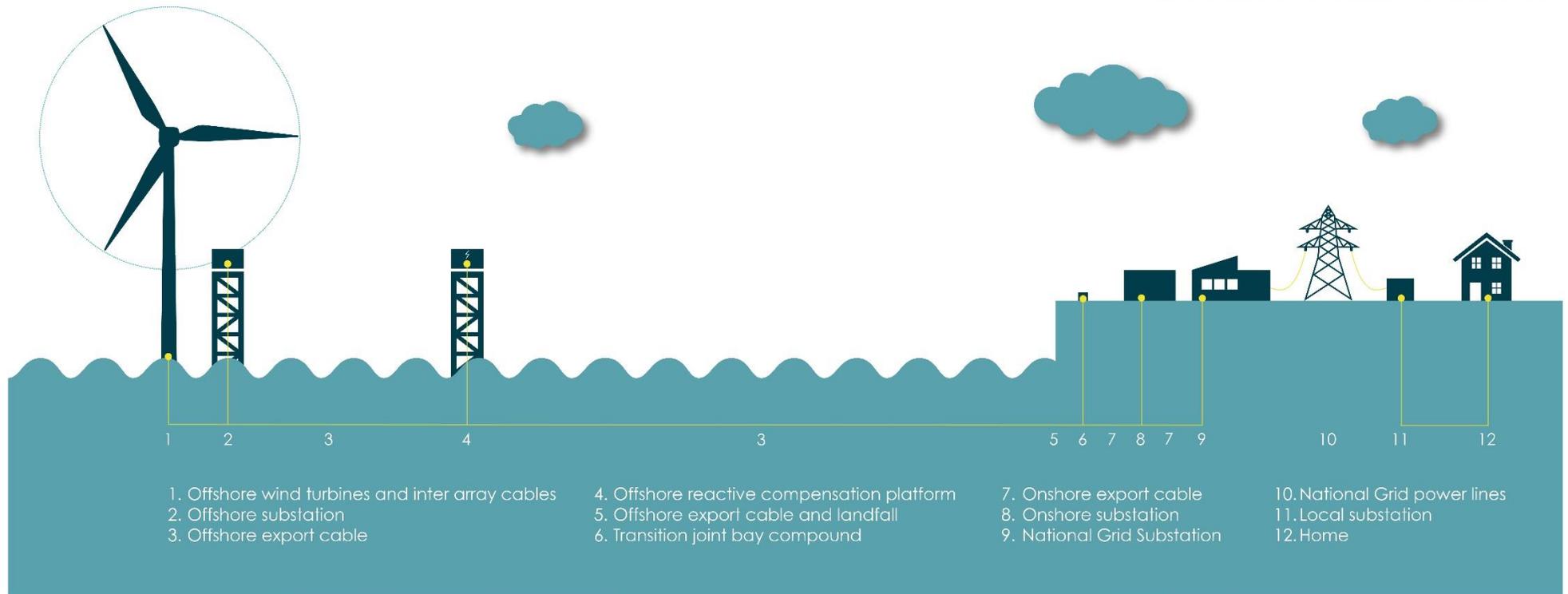


Figure 2.1 An overview schematic of an offshore wind farm and associated infrastructure

3 The Project

Overview

3.1.1 The Project is a proposed offshore windfarm located approximately 54 kilometres (km) off the coast of Lincolnshire, England (Figure 3.1), comprising an offshore generating station (wind farm) and offshore and onshore transmission infrastructure including any additional development (this is the infrastructure required to connect the offshore wind farm to the National Grid onshore infrastructure – this is how we get the electricity from the wind farm into people’s homes).

3.1.2 The current area of search for the for the offshore and onshore transmission infrastructure (which includes the Array area and Offshore and Onshore PEIR Boundaries - Figure 3.1) has been defined based on the latest recommendations of the Offshore Transmission Network Review (OTNR) (See Section 3.2) and has been updated following stakeholder feedback. The OTNR confirmed that there are two connections options under consideration for the Project;

- Lincolnshire Node, and;
- Weston Marsh.

3.1.3 The offshore PEIR boundary (Figure 3.1) includes both the 500km² offshore wind farm array area, which is intended to be reduced to 300km² for the DCO application, the offshore export cable corridor (ECC), and the export cable landfall at Wolla Bank, Lincolnshire (to Mean High Water Springs).

3.1.4 The onshore PEIR boundary (Figure 3.2) also includes the export cable landfall (to Mean Low Water Springs), the onshore ECCs and the potential onshore substation (OnSS) search areas.

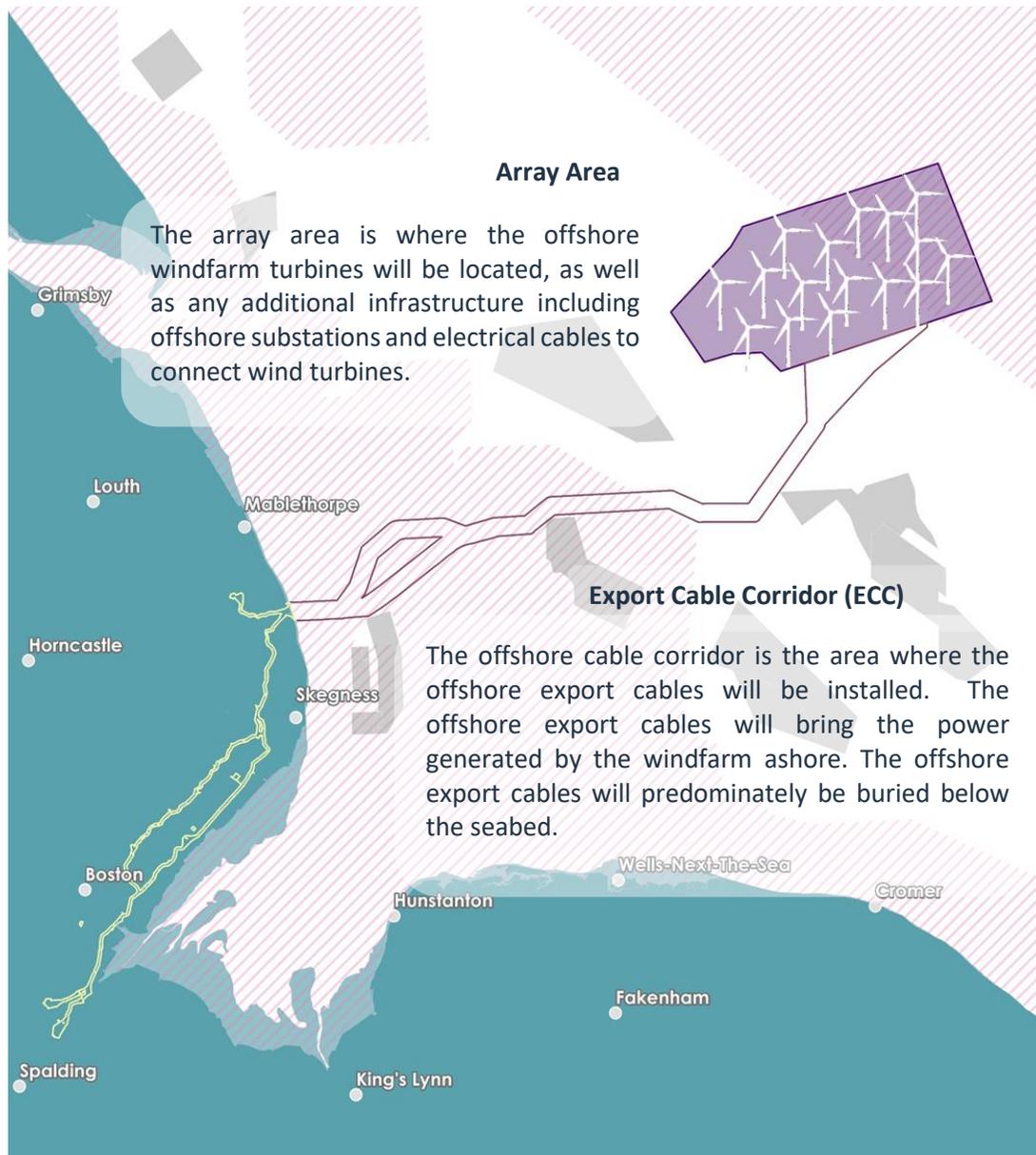


Key Project Components

3.1.5 The following pages outline the key infrastructure components and details on the individual project elements that the PEIR is currently based upon.

3.1.6 Should you have any queries on this document, the Project itself or anything you would like to ask our team, please see the back page of this document for ways to contact us.

Our Offshore Proposals



-  Array Area
-  Offshore PEIR Boundary
-  Other Windfarms
-  Designated Site
-  Onshore PEIR Boundary

The offshore elements of The Project consist of an offshore wind turbine array, located approximately 54 km east of the Lincolnshire coast, along with offshore platforms, and export cables and array cables to connect the electricity generated to the National Grid.

The key offshore PEIR assumptions:

- Up to 93 wind turbines;
- Wind turbines will have a maximum tip height of 403m (See – Section 3.1.7);
- Up to four offshore substations (depending on size adopted) (See – Section 3.1.9);
- Up to two offshore reactive compensation platforms (See – Section 3.1.11); and
- Offshore export cables (see – Section 3.1.12).

Figure 3.1 Offshore PEIR Boundary

Our Onshore Proposals



-  Onshore PEIR Boundary
-  Onshore Substation (OnSS) Search Zone
-  Scheduled Monument
-  Designated Site

The Project landfall is located at **Wolla Bank**, south of Anderby Creek. Underground cables would continue underground to **one of two different connection points** still under consideration by National Grid;

- A connection to the existing overhead line circuits at **Weston Marsh** (north of Spalding)
 - There are two alternative onshore cable route options (Onshore ECCs – See Section 3.1.22) being considered to this connection point as shown on the “PEIR Boundary” in yellow on the image; these are Weston Marsh (north of the A52) and Weston Marsh (south of the A52).
 - There are also two onshore substation (OnSS) search zone options (See Section 3.1.25) being considered for this connection point, Weston Marsh North and Weston Marsh South as shown by the “Onshore Substation (OnSS) Search Zone” in purple hatch on the image.
- Or;
- to a proposed new National Grid connection point, **Lincolnshire Node** (east of Alford)
 - There is only one proposed cable route option and substation search zone being considered for this connection point.

Figure 3.2 Onshore PEIR Boundary

Key Offshore Project Elements

Wind Turbine Generators (wind turbines)

3.1.7 Wind turbine generators are comprised of a foundation with a tower atop, with a nacelle at its tip housing the electrical equipment, a gearbox and generator. The turbine blades are attached to the front of the nacelle and these capture energy from the wind causing them to turn, transforming it via the generator into electricity.

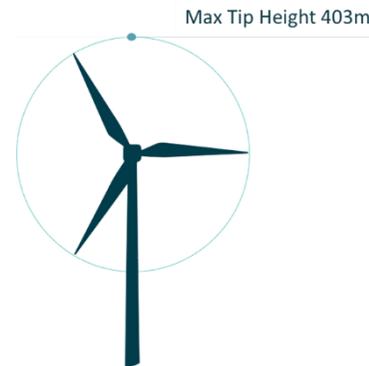


Figure 3.3 Schematic of a Wind Turbine Generator

Foundation Types

3.1.8 All wind turbines and offshore structures such as the platforms will be fixed to the seabed. The choice of foundation type and design is dependent on the seabed conditions and the infrastructure that is being supported.

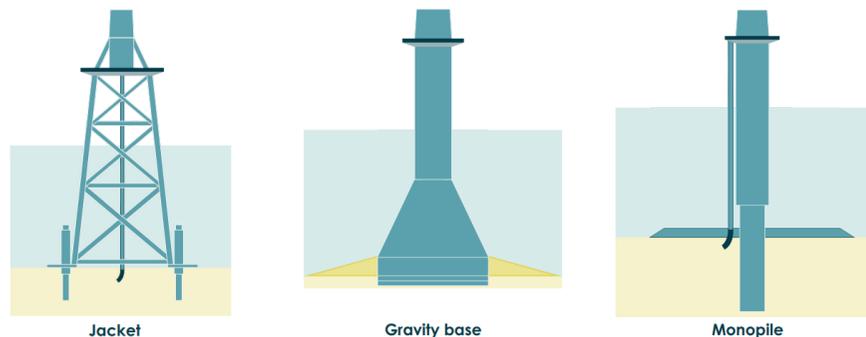


Figure 3.4 Schematic showing typical foundation types

Offshore Substations

3.1.9 Offshore substations collect the electricity generated so it can transmit to National Grid. These will be within the array area of the Project.

Offshore Accommodation Platform

3.1.10 These allow personnel to perform operation and maintenance work and can allow for stays on site and reduce crew transfers via boat or helicopter during the operational phase.

Offshore Reactive Compensation Platforms (ORCPs)

3.1.11 The HVAC transmission system (See 3.1.18) may require booster stations known as Offshore Reactive Compensation Platforms (ORCPs) to compensate for the transmission losses along the export cable route. These are known as Offshore Reactive Compensation Platforms.

Offshore ECC (Subsea Cables)

3.1.12 Subsea cables are required to transmit the generated electricity to the landfall. Cables will also connect the wind turbines to the offshore substations (known as inter-array cables) and from the substation to the shore. Known as export cables, these will be placed in the offshore Export Cable Corridor (ECC).

Cable Protection, Scour Protection and Cable Crossings

3.1.13 Where possible cables will be protected by burying them under the sea floor. Where this is not possible, cable protection such as rock placement will be required. Where the Project's cables are required to cross existing cables or pipelines, cable protection will also be utilised.

Landfall

3.1.14 This is the area where the offshore export cables will come ashore. The cables will be buried beneath the landfall location of Wolla Bank, Lincolnshire, south of Anderby Creek.

3.1.15 The cables at the Landfall will be facilitated through the use of horizontal directional drilling (HDD) to install ducts within which the offshore power cables can be installed and joined to the onshore cables at a transition joint bay onshore.

What does this mean? This means that the project will be drilling underneath the beach, the dunes, Anderby Marsh Local Nature Reserve and the coastal (Roman Bank) road. The drill compound will be located on the western side of the coastal road (Roman Bank), ensuring minimal interaction with the beach and the Coastal Country Park.

3.1.16 There will be up to six transition joint bays at the landfall site. Throughout the construction a logistics compound will be required which will be west of the coastal (Roman Bank) road.

3.1.17 The export cables will continue underground and connect to the onshore transmission system for onward transmission to the OnSS and ultimately the National Grid.

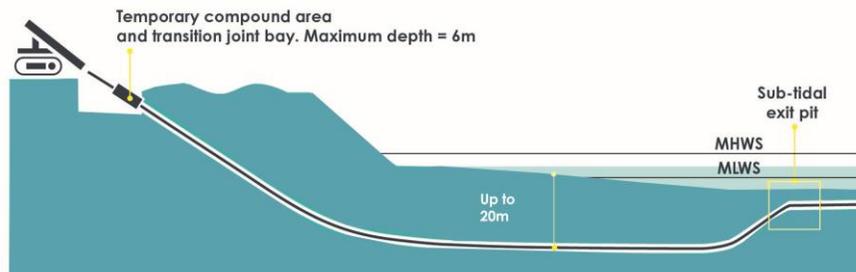


Figure 3.5 Schematic representing the HDD approach for bringing the offshore cables ashore.

Type of Transmission Infrastructure

3.1.18 The Project has confirmed that only a single transmission technology type - High Voltage Alternating Current (HVAC) transmission technology will be used i.e. specifically excluding High Voltage Direct Current (HVDC) technology.

3.1.19 This technology means a smaller onshore substation will be required reducing the visual impacts associated with the permanent above ground infrastructure.

3.1.20 Both Air Insulated Switchgear (AIS) and Gas Insulated Switchgear (GIS) technology are under consideration for the OnSS. The type of technology adopted has an impact on the maximum footprints and heights of the onshore substation.

3.1.21 The Project has prepared a “Onshore Substation Design Principles Document” (Appendix 3.3 (document 6.2.3.3)) that provides further details on the types of technology and guiding principles the Project are exploring in relation to the OnSS design.



Key Onshore Project Elements

Onshore Export Cable Corridor (ECC)

3.1.22 The Onshore ECC is where up to 80km of underground cabling (export cables) between Wolla Bank and Weston Marsh, or up to 11km of underground cabling between Wolla Bank and Lincolnshire Node will be placed to allow power to be transferred to the Project’s connection point and ultimately into the National Grid Transmission System.

3.1.23 The export cables will be placed in up to four trenches to transfer the power generated across South Lincolnshire to the grid connection at the Onshore Substation (OnSS). The onshore ECC will also include compounds, temporary access routes and a temporary haul road.

3.1.24 The width of the PEIR boundary is 300m. Whilst the width of the cable corridor may fluctuate along the route to account for specific environmental or engineering constraints, the Project will ultimately require a typical working width of 80m during cable construction, reducing to a typical 60m wide corridor post construction. The current 300m PEIR boundary will therefore be refined (reduced) for the Project’s DCO Application.



Figure 3.6 Onshore export cable indicative layout

Onshore Substation (OnSS)

3.1.25 The OnSS search areas (Figure 3.2) are the potential locations where the permanent electrical OnSS infrastructure will be located to connect into the National Grid.

3.1.26 The OnSS will contain the electrical components that are needed to transform and convert the power from the wind turbines to match the power in the National Grid Transmission system. The power must first be directed to the Project OnSS; there will also be a need for a National Grid substation and associated enabling works within the vicinity of the Project’s OnSS including 400kV cables between our Project substation and that will be developed by National Grid.

3.1.27 The maximum footprints of the Project’s OnSS are outlined below and visual impacts are summarised in Section 5.11.

Table 3.1 Onshore substation Maximum Design Parameters

Parameters	Maximum Design Envelope (m ²)
Maximum number of substations	1
Indicative site area	180,000
Indicative temporary working area	270,000
Maximum building height (m)	19
Maximum lightning protection height (m)	30

3.1.28 One Project onshore substation

- Both AIS and GIS technology under consideration for the OnSS (this has an impact on the maximum footprints and heights of the onshore substation).
- The type of infrastructure adopted for the Project will be confirmed at detailed design stages.

Preparatory Works

3.1.29 Before the installation works for the Project, site preparation works will be required. These could include:

- Pre-construction surveys;
- Hedgerow removal and vegetation clearance; and
- Drainage management.

Logistics Compound

3.1.30 Temporary logistics compounds of various sizes will be required along the Project onshore ECC, for laydown and storage of materials, plant and staff, as well as space for small temporary offices, welfare facilities, security and parking. Logistics compounds will also be required for crossings (such as roads and rivers) to site operations such as drilling works.

3.1.31 During the intertidal works (landfall HDD) for the Project a landfall logistics compound will be required housing the transition joint bay works and any drilling works.

3.1.32 All logistics compounds will be removed, and sites restored to their original condition when construction has been completed, however it may be necessary to retain some compounds for slightly longer periods during the commissioning stages of the Project.

Access and Haul Roads

3.1.33 To provide access to the Project onshore ECC, limit damage to the agricultural land and reduce construction traffic on the main road network, a temporary haul road, typically 6.8m wide (Figure 3.6) will be installed in its entirety (except where the Project has committed to trenchless works only) as part of the pre-construction cable works at the start of construction and will extend the full length of the Project onshore ECC, where possible.

3.1.34 In general, the haul road would remain for the duration of the construction works, only being removed prior to final reinstatement.

3.1.35 The haul road would be located within the onshore ECC. Where

there are obstacles that must be crossed by the haul roads, such as drainage ditches, temporary culverts or bridges may be installed.

Operation and Maintenance (O&M)

3.1.36 Once the construction of the Project is complete and the windfarm is fully commissioned, it will enter into the operational and maintenance phase. Upkeep of the infrastructure will be ongoing throughout the Projects lifetime, and this will entail works such as routine servicing, component replacement, painting, cleaning, repairs and remedial works. The lifetime of the Project is anticipated to be approximately 35 years.

Decommissioning

3.1.37 At the end of the operational lifetime of the Project, it will be decommissioned. Prior to this a decommissioning plan will be agreed with the relevant authorities and regulators, to take into account advances in techniques and technology.



Construction Programme

3.1.38 The construction programme shown below highlights the likely durations required for installing the major elements of the Project and how they may relate to one another. The maximum construction period duration is 4 years 9 months (57 months).

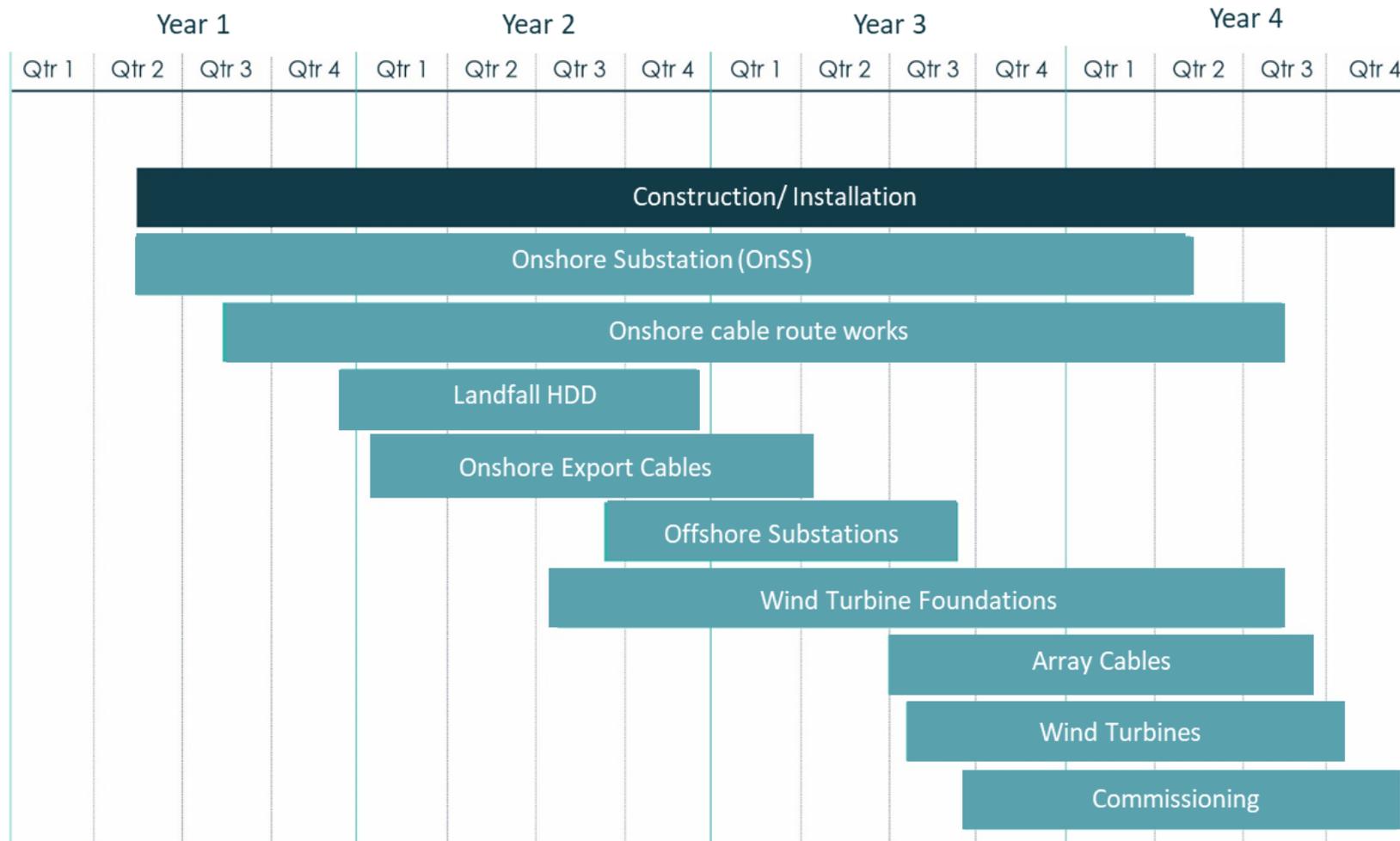


Figure 3.7: Indicative Construction Programme

3.2 Early Project Definition, Site Selection and Refinement

Further details on defining both the onshore and offshore PEIR boundaries including the Array area, offshore Export Cable Corridor (ECC), Landfall, Onshore ECC and Onshore Substation Locations are detailed in PEIR Volume 1, Chapter 4: Site Selection and Consideration of Alternatives (PEIR document 6.1.4). The consultation that has been undertaken to date and that has informed the iterative design process of the Project is summarised in this Consultation Summary Document (document 5.1).

The key project areas discussed in this section can all be viewed in Figure 3.1 (offshore) and Figure 3.2 (onshore).

Our Array Area

3.2.1 In October 2019, The Crown Estate (TCE) launched Offshore Wind Leasing Round 4 (commonly referred to as Round 4) for seabed rights to develop offshore wind projects in English and Welsh waters.

3.2.2 The location for the Project's array area was selected through the consideration of various environmental and engineering/technical constraints and following an auction process, the Project was awarded Preferred Bidder status for the Project array area (Figure 3.1) located in the Southern North Sea, in February 2021.

3.2.3 The Agreement for Lease (AfL) for the Project was signed by the Project in January 2023. As part of the AfL with TCE, the Project must reduce the array area boundary to meet an increased energy density requirement prior to construction. This equates to a reduction in the array area from the current 500km² to approximately 300km². The Project intends to make this reduction prior to making their DCO Application at the end of 2023. Full details of the final reduced area and the rationale for the final site selection will be provided in the Environmental Statement (ES).

Our Grid Connection

3.2.4 In July 2022, National Grid Energy Systems Operator (NGESO) published the preliminary results of the Offshore Transmission Network Review (OTNR) Holistic Network Design (HND), which confirmed that there are two connections options under consideration for the Project;

- Lincolnshire Node, and;
- Weston Marsh.

3.2.5 The final conclusions of the HND Report have not yet been finalised and therefore the PEIR and our consultation to date includes proposals for both of these options. Once a grid connection is confirmed by National Grid, only one of these connection options and associated onshore infrastructure will be taken forward.

Landfall

3.2.6 Once the grid connection options for the Project were confirmed, the Project was able to focus on the evaluation of landfall options along the Lincolnshire Coastline, which would be the most economically and environmentally viable landfall options for the Project.

3.2.7 Following site analysis, ground truthing via site visits and technical assessments, it was determined that a landfall at Wolla Bank was the most optimal landfall site for both potential grid connection options.

Offshore Export Cable Corridor (ECC)

3.2.8 Five offshore Export Cable Corridor (ECC) options were identified to the preferred landfall options identified on the Lincolnshire coastline for the Weston Marsh and Lincolnshire Node connection options. The offshore routing to the Lincolnshire landfall sectors was highly constrained in particular by a combination of protected sites, known wrecks, other marine users and the Inner Silver Pit bathymetric feature.

3.2.9 Following detailed survey work and consultation; the analysis of the export cable corridor options, comprising consideration of the engineering feasibility and the environmental constraints, concluded an

Offshore ECC within which remains some optionality to the exact routing of the offshore cables which will be refined following further consultation and survey work.

Onshore Project Substation (OnSS)

3.2.10 The Project has progressed the evaluation of substation sites in line with the connection options proposed by National Grid and three potential OnSS study areas being considered:

- Lincolnshire Node (location inshore of the landfall to the west of the village of Huttoft);
- Weston Marsh North (location is south Lincolnshire, to the northeast of Spalding, north of the River Welland); and
- Weston Marsh South (location is south Lincolnshire, to the northeast of Spalding, south of the River Welland).

3.2.11 The identification of the search areas have been influenced by a number of key factors such as; proximity to the proposed connection points, flood risk, agricultural land classification (Best and Most Versatile Agricultural Land), proximity to residential areas, visual aspects and other environmental considerations.

Onshore ECC

3.2.12 The guiding principles for locating the Project's onshore ECC was to identify an economic and efficient cable route corridor (i.e., as close as possible to the grid connection point and in as direct a line from the landfall to the grid connection point as possible) that does not, as far as practicable, give rise to significant adverse environmental impacts including seeking to avoid residential properties and minimise disturbance from construction activities.

Site Selection & Taking on Board Your feedback

3.2.13 The aim of the site selection process is to develop an overall footprint and set of design parameters that are considered most appropriate from an environmental and social perspective, and feasible from an engineering and commercial perspective. This ensures that there are long term considerations being made to secure the lowest possible energy cost is passed onto the consumer.

3.2.14 The Project team have been dedicated to ensuring site selection decisions were communicated and feedback was allowed to influence and refine the project design.

3.2.15 The onshore site selection process utilised expertise from specialists, comprising of engineers, planners, land advisors, legal and environmental consultants. The location and design of the Project infrastructure has taken into account a wide range of environmental, physical and social considerations.

3.2.16 The Project has made a number of key updates and additions to the Project based on feedback from the Phase 1 Consultation such as the inclusion of the alternative onshore ECC route "Weston Marsh North" which was included to the Project design as an option being considered with a view to addressing concerns raised should the alternative be deemed more suitable, following detailed survey work and further engagement.

3.2.17 The Applicant has undertaken extensive engagement to ensure that the Project refinement and designs were informed by all relevant parties. Engagement with stakeholders, communities, and landowners was undertaken through a range of methods such as in-person consultation events, virtual exhibitions, online events, leaflets, a website, expert topic groups and community liaison meetings. The Project has prepared a Consultation Summary Report (document 5.1) that details the consultation to date and next steps.

3.3 The Environmental Impact Assessment Process

Purpose of an Environmental Impact Assessment

3.3.1 The purpose of EIA is to identify any potential environmental impacts as a result of the development and then propose the means to avoid and reduce having significant impact. This information is then presented in an ES to assist regulators in the decision-making process.

3.3.2 Assessments are made on the significance of an effect on a wide range of receptors, including physical, biological and human, and mitigation measures are proposed to reduce any significant effects. Effects that remain after mitigation are reported as ‘residual effects’.

3.3.3 To ensure a robust PEIR and EIA, a range of potential construction methodologies and infrastructure design options have been considered, and the ‘Maximum Design Scenario’ has been presented and assessed for each parameter. This approach (referred to as the ‘Rochdale Envelope’) is well-established within large scale infrastructure projects. This ensures that the maximum design scenario, or worst case scenario, is assessed and no greater adverse environmental effects will occur than those predicted in the EIA.

Consultation on an Environmental Impact Assessment

3.3.4 The EIA considers all relevant topics both offshore and onshore. The topics included within the EIA are agreed with the Planning Inspectorate through the scoping process. The Projects assesses which topics they believe require to be included and scoped in and out of assessments and the Planning Inspectorate and relevant statutory consultees provides a response through the Scoping Opinion in which they agree or disagree with. The Project’s Scoping Opinion was received 9 September 2023¹.

¹<https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/EN010130/EN010130-000035-EN010130-Scoping-Opinion.pdf>

Impact Assessment Process

3.3.5 For each topic, a description of the baseline environment was identified through a combination of desk-based study, environmental surveys and consultation. The possible impacts were assessed throughout the lifetime of the Project, through construction, O&M and decommissioning and are presented within the relevant technical chapters of the PEIR.

3.3.6 A Guide to these topic chapters, including all associated PEIR documents and supporting submissions is included in Appendix 1 Phase 2 Consultation Document List.



4 Summary of Offshore Environmental Topics

4.1.1 This section summarises the results of the PEIR for each of the offshore EIA topics assessed. A Guide to these topic chapters, including all associated PEIR documents and supporting submissions is included in Appendix 1 Phase 2 Consultation Document List.

4.2 Marine Physical Processes

PEIR Chapter 7 (document 6.1.7) comprises the assessment of potential impacts on Marine physical processes of the Project.

4.2.1 The water depth is between 10m and 20m to the west and 20m and 30m in the central and eastern aspects of the array area. Inner Dowsing Race Bank and North Ridge Special Area of Conservation is located approximately 20km offshore and overlaps with the offshore ECC where the depth reduces to 0m to 10m. Average tidal currents run at a peak rate of >1.4m/s to the southwest of the array area. The mean wave height for the majority of the site is between 1.75m and 2m, during storm events waves heights of up to 4m have been recorded.

4.2.2 Most of the array area is split between Sandy Gravel and Gravelly Sand seabed with small amount of (gravelly) Sand and Sand with coarser sediments lying closer to the landfall. Beneath the surface sediments lies an approximate 60/40 split of Mesozoic interbedded and chalk respectively. Suspended Sediment concentrations are low within the Panel Array and increase along the export cable towards landfall.

4.2.3 It is considered that the impacts associated with the Marine Processes are considered within:

- Volume 1, Chapter 8: Marine Water Quality;
- Volume 1, Chapter 9: Benthic Subtidal and Intertidal Ecology;
- Volume 1, Chapter 10: Fish and Shellfish Ecology;
- Volume 1, Chapter 11: Marine Mammals; and
- Volume 1, Chapter 14 Commercial Fisheries.

4.2.4 The Project has made a number of commitments to reduce and minimise the impacts to marine processes, including modifications to any cable protection in the nearshore, no cable installation within the intertidal area and to bury cables underneath the seabed wherever possible. With the incorporation of these commitments which are embedded in the Project design there are no significant impacts to marine processes predicted.

4.3 Marine Water and Sediment Quality

PEIR Chapter 8 (document 6.1.8) comprises the assessment of potential impacts on Marine water and sediment quality of the Project.

4.3.1 The sediment composition within the zone of influence, between 10-15km around the panel array and ECC, is split equally between fines, sand and gravel. There are no Cefas Action Level 2 metals either within the array area and the ECC, however, Arsenic and Nickel were recorded in concentrations exceeding Action Level 1 within the array area and Arsenic, Chromium and Nickel were present with concentrations exceeding Action Level 1 levels in the ECC out of 23 metal concentrations tested.

4.3.2 Threshold Effect Levels for Polycyclic aromatic hydrocarbons which are naturally present in fossil fuels and other hydrocarbon based materials were exceeded at one of 30 stations within the array area and two stations out of the 28 tested within the ECC .

4.3.3 In order to minimise and reduce impacts to Marine Water and Sediment Quality a number of mitigation measures have been embedded within the Project design, the development boundary selection was made following a series of constraints analyses, with the array area and offshore ECC route selected to ensure the impacts on sensitive environmental receptors are minimised.

4.3.4 During construction phase of the development a Code of Construction Practice (CoCP) which will confirm construction methods and the roles and responsibilities of parties engaged in construction. It will detail any construction-related mitigation measures. A cable burial risk assessment will be undertaken to inform front end engineering works. Cable burial will be the preferred option for cable protection, and this will

minimise any impacts associated with habitat loss.

4.3.5 A Project Environmental Management Plan will be produced post-consent and implemented to cover the construction and operation and maintenance (O&M) phases of the Project. The Project Environmental Management Plan will include a Marine Pollution Contingency Plan to cover accidental spills, potential contaminant release and include key emergency contact details (e.g. Marine Management Organisation, Maritime and Coastguard Agency and the Project site co-ordinator).

4.3.6 During the O&M phase of the Project, a Scour Protection Management Plan will be developed will consider the need for scour protection where there is the potential for scour to develop around the Project infrastructure, including turbine and substation/platform foundations and cables. The timely installation of scour protection would provide embedded mitigation to any seabed sediments that would otherwise be disturbed by scouring. Scour protection may take the form of:

- Rock/gravel placement;
- Concrete mattresses;
- Flow energy dissipation devices;
- Protective aprons or coverings;
- Ecological based solutions; and
- Bagged solutions.

4.3.7 Where burial depth cannot be achieved, cable armouring will be implemented (e.g., mattressing, rock placement etc); further detail is provided in Volume 1, Chapter 3: Project Description. The suitability of installing rock or mattresses for cable protection will be investigated, based on the seabed current data at the location of interest and the assessed risk of impact damage.

4.3.8 During the decommissioning phase of the Project development of, and adherence to, a Decommissioning Programme will be required. No significant adverse effects were identified, and no additional mitigations

measures outside those above were identified.

4.4 Benthic and Intertidal Ecology

PEIR Chapter 9 (document 6.1.9) comprises the assessment of potential impacts on Benthic and Intertidal Ecology of the Project.

4.4.1 Both the array area and the ECC have seabed (benthic) habitats typical of southern North Sea. Analysis of samples collected across the array area and ECC have identified 11 different animal community types (biotopes), while the Project ECC identified eight.

4.4.2 The array area does not overlap any designated sites for nature conservation for seabed ecology although the offshore ECC does overlap with Inner Dowsing Race Bank and North Ridge Special Area of Conservation which is designated for reefs and sandbanks and Greater Wash Special Protection Area which is designated for reefs, sandbanks, mudflats and sandflats not covered by seawater at low tide, large shallow inlet and bays, Salicornia and other animals colonizing mud and sand, Atlantic salt meadows and Mediterranean and thermophilous Atlantic halophilous scrubs.

4.4.3 The assessment considered several potential environmental effects including the impacts of temporary habitat loss, increases in suspended sediment concentrations and seabed disturbance leading to the release of sediment contaminants from construction activities. Permanent habitat loss/alteration, temporary habitat disturbance, colonisation of the wind turbines and scour/cable protection, increased risk of the introduction or spread of invasive non-native species, changes in physical processes resulting from the presence of the Project's subsea infrastructure e.g., scour effects, changes in wave/tidal current regimes and resulting effects on sediment transport and potential electromagnetic field effects generated by interlink and export cables from O&M activities as well as any potential impacts arising from the decommissioning phase of the Project.

4.4.4 There are several mitigation measures presented in order to reduce and minimise potential impacts to the seabed and intertidal ecology including the micro-siting of the Project infrastructure around

Annex I habitats as far as practicable and the development boundary selection was made following a series of constraints analyses, with the array area and offshore ECC selected to ensure the impacts on sensitive environmental receptors are minimised.

4.5 Fish and Shellfish Ecology

PEIR Chapter 10 (document 6.1.10) comprises the assessment of potential impacts on fish and shellfish ecology of the Project.

4.5.1 The fish communities in the vicinity of the Project array area and ECC are typical for this area of the western North Sea, there is an abundance of bottom dwelling species such as whiting and plaice, as well as sprat and mackerel who prefer more open water. The Project overlaps with areas used as fish spawning and nursery habitats, including those used by herring and sandeel. Commercially important shellfish species are also present including brown crab, European lobster and ocean quahog. A number of migratory fish species, some of which are of conservation interest, including Atlantic Salmon, sea and river lamprey and European eel are known to inhabit the region.

4.5.2 Underwater noise generated during the installation of piled foundations together with those impacts arising from the disturbance of the seabed during construction have been assessed. A number of impacts during operation could also affect fish and shellfish have similarly been assessed, notably: habitat loss and/or change associated with the placement of infrastructure on the seabed; and changes due to a potentially reduced level of commercial fishing in the array area.

4.5.3 The Project has made a number of commitments to minimise and reduce the impacts on fish and shellfish, the most relevant being to bury the cables under the seabed wherever possible and to reduce the need for additional cable protection such as rock dumping; and to restrict the number of foundations that could be installed at any one time to two, in order to reduce the underwater noise impacts. With the incorporation of these commitments which are embedded in the Project design there are no significant impacts to fish or shellfish predicted.

4.6 Marine Mammals

PEIR Chapter 11 (document 6.1.11) comprises the assessment of potential impacts on marine mammals of the Project.

4.6.1 The marine mammals most likely to occur in the vicinity of the Project are harbour porpoise, bottlenose dolphin, white beaked dolphin and minke whale and grey and harbour seals. Site-specific surveys identified that harbour porpoise is the most commonly occurring species with the Southern North Sea Special Area of Conservation, which is designated to help protect the harbour porpoise.

4.6.2 During construction, the impact assessment considered the impacts of the underwater noise arising from the piling of the foundations on marine mammals, including the potential for auditory injury, temporary disturbance, vessel collisions, and the disturbance from the clearance of unexploded ordnance. Impacts have also been considered during the operation and decommissioning phases of the Project.

4.6.3 The Project has made a number of commitments to reduce and minimise the impacts to marine mammals, notably in relation to the reduction of underwater noise levels. During piling operations, a soft start procedure will be used where lower energy is applied to the hammer used for piling before increasing the hammer energy to its required level. Soft start allows for marine mammals to move away from the source of the sound before it reaches levels which could be damaging. Other protocols specific to piling and unexploded ordnance detonation will also be implemented to protect marine mammals. With these embedded mitigation measure in place there are no significant impacts to marine mammals predicted.

4.7 Offshore and Intertidal Ornithology

PEIR Chapter 12 (document 6.1.12) comprises the assessment of potential impacts on offshore and intertidal ornithology (birds) of the Project.

4.7.1 Digital aerial imagery has been collected over a two-year period and began in March 2021. At the time of PEIR publication, 18 months of digital aerial surveys will be available (March 2021-August 2022). This data

will be used to determine the type and numbers of birds present in and around the Project. A total of nine different bird species were identified, with the key species recorded in the greatest number being guillemot, gannet and kittiwake. On the beaches in the vicinity of the export cable landfall, species likely to be encountered include black-headed gull, common gull, herring gull and sanderling.

4.7.2 The ECC directly overlaps with the Greater Wash Special Area of Protection (SPA) which has offshore ornithological designations for breeding terns, and overwintering red-throated diver and common scoter. There are a number of additional conservation sites of ornithological interest near to the project site including The Flamborough and Filey Coast SPA, The Wash SPA, Humber Estuary SPA, North Norfolk Coast SPA, Flamborough Head Site of Special Scientific Interest and Hornsea Mere.

4.7.3 The assessment has considered impacts from disturbance and displacement of birds and from the effects of their prey species during the construction phase of the Project. Operational effects that have been assessed include collision risk and barrier effects, such as blocking flight paths from the wind turbines.

4.7.4 The Project has made a number of commitments to reduce and minimise the impacts on ornithology, such as avoidance of the highest concentration of birds within the larger developable area, implementation of best practice protocol to minimise impacts along the transit routes to and from the site and increasing the gap between the lowest blade tip height to reduce the risk of bird collisions.

4.8 Marine and Intertidal Archaeology

PEIR Chapter 13 (document 6.1.13) comprises the assessment of potential impacts on marine and intertidal archaeology of the Project.

4.8.1 There are 16 wrecks or obstructions within the Project array area and a further 38 within the ECC and export cable landfall. Of these the majority are dated in the 20th century, there are also a number obstructions which may have further archaeological interest. There are two post

medieval obstructions noted within the array area and two roman obstructions on the export cable landfall. There is also the potential for the seabed to contain deposits of archaeological interest both within the array area and the ECC. The archaeological assessment also considered the effects during the O&M and decommissioning phases of the Project particularly through processes such as compression (crushing) on buried archaeology.

4.8.2 The Project has made a number of commitments in relation to marine archaeology, including micro-siting to avoid and identified marine archaeological and heritage receptors, geophysical surveys undertaken pre-construction will be subject to full archaeological review, where relevant in consultation with Historic England and a post construction monitoring plan will be produced to identify areas or sites of archaeological significance.

4.9 Commercial Fisheries

PEIR Chapter 14 (document 6.1.14) comprises the assessment of potential impacts on commercial fisheries of the Project.

4.9.1 The Project lies within a wider region within which a variety of commercial fisheries operate. The value of landings in the wider region is dominated by shellfish species which account for 99% of all landings by value. Over 92% of all landings were by UK vessels and were caught by mostly pots and traps and dredges whilst other key species such as sandeel, plaice are targeted by beam trawl and otter trawl.

4.9.2 The impacts assessed primarily relate to the loss of, or exclusion from established fishing grounds, disturbance to commercially important fish and shellfish resources due to construction activities and the presence of the wind farm during operation. Displacement of fishing activity from the operational windfarm to other areas may also lead to increased pressure on neighbouring fishing grounds. Increased vessel traffic associated with the Project may cause interference with fishing activities.

4.9.3 The main commitments made by the Project in order to reduce and minimise impacts on commercial fishing are reducing the number of export cables from six to four, where possible burying the cable and

applying for safety zones around the array area pre-construction. The Project also commits to ongoing liaison with the fishing industry through the appointment of a Fisheries Liaison Officer and Fishing Industry Representative as well as developing a Fisheries Liaison and Co-Existence Plan. Procedures aligned with guidance produced by the Fishing Liaison Officer will be implemented to reduce any adverse effects and with these commitments, no significant adverse effects on commercial fisheries are predicted.

4.10 Shipping and Navigation

PEIR Chapter 15 (document 6.1.15) comprises the assessment of potential impacts on shipping and navigation of the Project.

4.10.1 The Project is located near a number of major shipping routes with many passing through the array area. These are predominantly vessels transiting west to northeast between the Humber Estuary and the Baltic Sea, there are also routes running from southeast to northwest between northeast England and mainland European ports in the North Sea. Shipping density is at its highest in the north-western aspect of the ECC with many other vessels passing along the northern array boundary.

4.10.2 There are 13 commercial shipping routes which pass either through or near to the array area and ECC. The key shipping route is the Humber Ports to Rotterdam route which operates an average of 16 vessels daily, while the Tees to Rotterdam route operates on average of 12 vessels per day. The majority of these vessels are cargo along with some oil and gas industry vessels.

4.10.3 The impacts assessed mostly relate to the Project's structures creating an obstacle to shipping as well as restrictions to adverse weather routing. Knock-on effects include increased risk of collision outside of the array area and the reduction in the search and rescue capabilities of other vessels. The turbines also present a risk for vessels whilst cable protection may reduce the navigable water depth of some areas.

4.10.4 The Project has made a number of commitments to reduce and minimise the impact on shipping and navigation such as the charting of all project infrastructure including structure and subsea cables, the marking

and lighting of features, the application for safety zones around structures during construction and periods of maintenance. The Project have made a commitment to agree the windfarm layout with the Maritime and Coastguard Agency. With these commitments in place no significant adverse effects to shipping or navigation are predicted.

4.11 Aviation and Radar

PEIR Chapter 16 (document 6.1.16) comprises the assessment of potential impacts on aviation and radar of the Project.

4.11.1 The airspace above and adjacent to the array is used for both civil and military aircraft and lies within the London Flight Information Region for Air Traffic Control. The Project array area will be transited by helicopters, which could result in the need for them to fly higher when using this route. The assessment has also considered the potential for the Project to create an aviation obstacle to aircraft, including helicopters operating at adjacent oil and gas platforms, and the impact of increased air traffic associated with the construction and operation of the Project affecting the available airspace for other users.

4.11.2 The Project has committed to formally charting obstacle locations in aeronautical documentation as well as the permanent marking and lighting of obstacles. Prior to construction the position height and lighting of each completed permanent structure will be communicated to both the civil and military aviation for inclusion in the aeronautical information publication.

4.12 Seascape Landscape and Visual Assessment

PEIR Chapter 17 (document 6.1.17) comprises the assessment of potential impacts on seascape, landscape and visual receptors of the Project.

4.12.1 The current offshore seascape is defined as East Midlands Offshore Gas Fields Marine Character Area which is formed by an expanse of open sea with extensive shallow offshore waters below 30m. Other offshore windfarms are located within the Marine Character Area meaning that windfarms form a key characteristic of the current seascape character. Due to the distance of the offshore array from the coast, the development

will be mostly visible to those present in the offshore environment.

4.12.2 The assessment considered the potential effects has considered the potential effects on the seascape due to the physical presence of construction vessels and the long-term effects from the locations on the North Norfolk Heritage Coast, Spurn Head Heritage Coast as well as the Lincolnshire Wolds Area of Outstanding Natural Beauty and Norfolk Coast Area of Outstanding Natural Beauty. Visual impacts for those on the coast are minimised as the location of the Project array area lies at considerable distance from the coast. The assessment predicts that there will be no significant effects on the seascape and visual resources as a result of the construction, O&M and decommissioning of the project.

4.13 Marine Infrastructure and Other Users

PEIR Chapter 18 (document 6.1.18) comprises the assessment of potential impacts on marine infrastructure and other users of the Project.

4.13.1 The Project lies in an area which includes current and potential future activity by the oil and gas industry. There are currently seven oil and gas licence blocks that fall within the array area, but none fall within the ECC.

4.13.2 Potential impacts on oil and gas activities include the interference with the current or future development activity and the safety and commercial operation of existing assets including helicopter operations to platforms and risk of collision with platforms. The Project is working with relevant oil and gas operators to assess the potential impacts arising from the Project. The assessment predicts that there will be no significant effects to infrastructure and other marine users as a result of the construction, O&M and decommissioning of the Project.

5 Summary of Onshore EIA Topics

5.1.1 This section summarises the results of the PEIR for each of the onshore EIA topics assessed. A Guide to these topic chapters, including all associated PEIR documents and supporting submissions is included in Appendix 1 Phase 2 Consultation Document List.

5.2 Air Quality

PEIR Chapter 19 (document 6.1.19) comprises the Air Quality Assessment which assesses the potential impacts on air quality of the Project.

5.2.1 The existing baseline for air quality evaluated Construction Dust, Road Traffic Emissions, non-road mobile machinery and vessel emissions. Of the three Local Planning Authorities that the PEIR boundary traverses, East Lindsay District Council and South Holland District Council have not identified any Air Quality Management Areas, whereas Boston Borough Council have declared two Air Quality Management Areas within their administrative area. All mapped background concentrations of pollutants (Nitrogen dioxide and particulates) are below the relevant Air Quality Assessment Levels.

5.2.2 The air quality assessment was carried out using dispersion modelling using predicted traffic numbers for the construction of the Project and the effects of dust from construction activities were assessed. Peak vehicle movements were assessed as a part of the operational effects of the scheme so as to provide a precautionary assessment. For decommissioning it is considered that the impacts will not exceed those of the worst-case construction scenario, therefore the impacts associated with the decommissioning phase will be similar or lesser in comparison to those established during the construction phase.

5.2.3 There are a number of commitments made by the Project to minimise and reduce the impacts to Air Quality including adhering to best practice construction measures, development and adherence to the CoCP which include measures to reduce temporary disturbance and incorporation of good practice measures to reduce dust from construction sites. By incorporating these commitments no significant effects have been

identified in relation to Air Quality.

5.3 Onshore Archaeology and Cultural Heritage

PEIR Chapter 20 (document 6.1.20) comprises the potential impacts on Archaeology and Heritage of the Project.

5.3.1 Following consultation with the Lincolnshire Historic Environment Officer, the baseline for the Archaeological Desk-Based Assessment and Heritage Statement was agreed. The study area for the Archaeological Desk-Based Assessment comprised a buffer of up to 2km from the onshore PEIR boundary to provide a robust baseline in response to the known archaeological potential where ground disturbance may occur. The study area for the Heritage Statement included a buffer of up to 5km including an inner 2km buffer for assets of lower significance, the 2-5km buffer being utilised for scheduled monuments and Grade I and II* Listed Buildings, Registered Parks and Gardens and Conservation areas.

5.3.2 The assessment was carried out with due regard to the guidance published by Historic England the National Planning Policy Framework and NPS EN-1, to determine the significance of the effect of each receptor.

5.3.3 For construction, permanent direct impacts have been identified for buried archaeological remains and temporary in-direct impacts to designated and non-designated heritage assets through setting change. At the operational phase, impacts are anticipated to be restricted to those caused by upstanding buildings and associated features at the OnSS. Impacts associated with the decommissioning phase will be similar or lesser in comparison to those established during the construction phase.

5.3.4 Subsequent revisions to an understanding of archaeological potential will be provided by forthcoming programmes of assessment and survey. These include geophysical survey and geoarchaeological monitoring of site investigations which will inform on a programme of further evaluation and mitigation to be undertaken in accordance with an outline Written Scheme of Investigation to be submitted with the final DCO application.

5.3.5 Through this assessment, no potentially significant direct or in-

direct impacts have been identified for designated heritage assets. Potentially significant direct and indirect impacts have been identified in respect to non-designated heritage assets.

5.4 Onshore Ecology

PEIR Chapter 21 (document 6.1.21) comprises the assessment of potential impacts of the Project on ecological receptors onshore.

5.4.1 The Project has considered internationally designated sites, nationally designated sites and local nature reserves within 15km, locally designated sites within 2km and Section 41 Priority Habitats and Species or protected or notable species within 2km from the PEIR Boundary, extended to 5km for bat roosts. The majority of impacts remain scoped into the assessment following the Scoping Opinion¹ for construction, operation and maintenance and decommissioning.

5.4.2 As the project design is ongoing, the Maximum Design Scenario has been selected as having the potential to result in the greatest effect on an identified receptor or receptor group. Primary mitigation has involved the sensitive siting and design of the onshore infrastructure during site selection, to ensure potential impacts on receptors are avoided or reduced.

5.4.3 The assessment approach is based on Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland², which are widely regarded as industry best practice.

5.4.4 Initial habitat suitability surveys are being completed across the PEIR boundary to further refined surveys included in the scope for assessment.

5.5 Onshore Ornithology

PEIR Chapter 22 (document 6.1.22) comprises the assessment of potential impacts of the Project on ornithological (bird) receptors onshore.

² Chartered Institute of Ecology and Environmental Management, (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial,

5.5.1 The Project has considered internationally designated sites, nationally designated sites and local nature reserves within 15km, locally designated sites within 2km and Section 41 Priority Habitats and Species or protected or notable species within 2km from the PEIR Boundary, with non-breeding birds surveys within the PEIR boundary and a 400m buffer. Two Royal Society for the Protection of Birds reserves Frampton Marsh and Freiston Shore are also in proximity to the PEIR Boundary.

5.5.2 These designations are largely concentrated along the coast where trenchless techniques will be employed to ensure no temporary or permanent loss of habitats within these designations occurs.

5.5.3 The assessment is based on the baseline data collected to date and the Maximum Design Scenario and data gaps are highlighted throughout the assessment as the breeding bird surveys are on-going in 2023 and one year of winter bird surveys has currently been completed for 2022-2023. The results and impact assessment will be presented within the Environmental Statement.

5.5.4 The Project has committed to undertaking a second season of winter bird surveys in 2023-2024.

5.6 Geology and Ground Conditions

PEIR Chapter 23 (document 6.1.23) comprises the assessment of potential impacts of the Project on geology and ground conditions.

5.6.1 The geology underlying the Project is made up of a range of intertidal deposits including peats, saltmarsh deposits and shelly clays lying on a bedrock of chalk. The Project is not located in a coal mining area and there is no significant coal bearing rock present. There are no records of active quarries in the area, or any modern brickworks and the area does not fall within the Lincolnshire minerals safeguarding zone. Agricultural land in the area is dominated by grade 3 which is of good to moderate quality with some areas of grade 1 and 2 which are of good to excellent quality. An assessment of baseline data determined that the risk of ground

Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester. Version 1.2 Updated April 2022.

contamination is negligible.

5.6.2 Construction effects including the exposure of the workforce to health impacts, encountering contamination during intrusive works, sterilisation of mineral deposits, physical intrusion to agricultural drainage and impacts to soil and land quality. Longer term the operational effects include the accumulation of hazardous ground gases, the laying of structures and services laid in direct contact with contaminated soils and groundwater and agricultural drainage.

5.6.3 The Project has made a number of commitments to minimising and reducing the impacts on geology and ground conditions including careful cable routing to avoid where possible any sensitive areas as well as obtaining permits for any proposed works where sea defence structures, main rivers, non-main and ordinary watercourses as per Environmental Permitting Regulations. A CoCP will be submitted as a part of the DCO application which will include measures to control potential impacts to ground conditions. By incorporating these commitments no significant effects have been identified in relation to geology and ground conditions.

5.7 Hydrology, Hydrogeology and Flood Risk

PEIR Chapter 24 (document 6.1.24) comprises the potential impacts of the Project on hydrological receptors and flood risk.

5.7.1 The Project onshore infrastructure has a number of ECC options which lie on principal bedrock aquifers of chalk. Anglian River Basin Management Plan monitor groundwater bodies within the river basin area which are grouped into managed catchments, assessments were made for each catchment and cable route option. There are a number of watercourses which are monitored under the Water Framework Directive with moderate ecological status. Coastal waters form part of the Greater Wash Special Protection Area which has bathing water of excellent quality at the coastline.

5.7.2 Construction impacts associated with the generation of turbid run-off, changes to surface water run-off patterns, potential damage to flood defences or surface water drainage infrastructure and pollution or disruption to groundwater through ground excavations or piling. Changes

to surface water drainage at the OnSS location were assessed for the O&M phase and decommissioning impacts include turbid run-off and potential damage to flood defences or surface water drainage infrastructure.

5.7.3 The Project has made a number of commitments to minimise and reduce the risk to hydrology, hydrogeology and flood risk including obtaining consent for any intrusive works, careful routing to avoid any key areas of sensitivity, detailed surface water drainage plans and preparation of a Flood Response Plan. Measures will also be implemented to prevent pollution. By incorporating these commitments no significant effects have been identified in relation to hydrology, hydrogeology and flood risk.

5.8 Land Use

PEIR Chapter 25 (document 6.1.35) comprises the potential impacts of the Project on Land Use.

5.8.1 The majority of the onshore ECC and OnSS substation search areas are located on agricultural land. The onshore project areas have been assessed using Agricultural Land Classification (ALC) which provides a method for assessing the quality of farmland to enable informed choices to be made about its future use within the planning system.

5.8.2 The quality of the agricultural land across the Land Use Study Area varies from ALC grade 1-3. As set out earlier in the Chapter, with the current scale of mapping it is not possible to differentiate Grade 3 into the subcategories of Grade 3a and Grade 3b. A worst-case scenario has been assumed in that all Grade 3 has the potential to be Grade 3a, therefore Best and Most Versatile (BMV) soils.

5.8.3 All construction work will be undertaken in accordance with a Soil Management Plan (SMP) which will be included as part of the Code of Construction Practice (CoCP) (an outline of which has been submitted for consultation (document 8.13)). All soil handling, placing, compaction and management will be undertaken in accordance with best practice (DEFRA, 2009). The SMP is intended to ensure that, following construction, agricultural land quality and productivity will be returned as quickly as possible to pre-construction levels.

5.8.4 The primary permanent onshore above ground infrastructure which has the potential to lead to the long-term loss of agricultural land is the OnSS which, at this stage, could be located in one of the three potential onshore substation sites which each cover various land classifications.

5.8.5 The OnSS footprint (including landscaping and drainage) will not cover the entirety of the substation search area (once confirmed). As set out in the IEMA (2022) guidance, where an area of between 5 and more than 20 ha of BMV soils experiences permanent or irreversible loss, the magnitude of the impact will be determined as Major. Further detailed design iterations are planned prior to ES stage with the aim of limiting the permanent loss of BMV land to within the range 5 – 20 ha, which is considered Moderate.

5.8.6 There are a number of locations where a designated footpath, bridleway or cycle route will be crossed by the cable or at the OnSS site including two crossings of the National Cycle Network. The English National Coast Path crosses the Project's landfall site, however as the Project has committed to the use of trenchless techniques at this location this would result in a negligible impact. Other crossings relate to footpaths/bridleways used on a more local level, the embedded mitigation includes for the provision of an Public Access Management Plan (PAMP) which would be implemented in areas along the PEIR Boundary where potential sources of recreational routes, such as PRow's and NCRs, would be impacted. The PAMP would give clear instructions, information and timings of any impacts to the usage of the route, as well as allow for the planning of any potential closures or diversions.

5.9 Noise and Vibration

[PEIR Chapter 26 \(document 6.1.26\) comprises the assessment for potential impacts of the Project on onshore Noise and Vibration receptors.](#)

5.9.1 The baseline noise environment was determined by a number of attended and unattended sound surveys which were approved by all relevant Local Planning Authorities (Lincolnshire County Council, Boston Borough Council, East Lindsay District Council and South Holland District Council). The study area was split into five separate areas where a series of

noise surveys were undertaken at each in Q4 of 2022.

5.9.2 The majority of impacts assessed relate to the construction phase of the Project and include temporary noise effects from construction traffic and noise and vibration effects of trenchless techniques to include water crossings and vibration effects of the foundation construction of the onshore options. Operational noise and vibration effects assessed during the operational and decommissioning phases as per the Scoping Opinion set out by the Planning Inspectorate in 2022.

5.9.3 The Project has made a number of commitments to reduce and minimise impacts from noise and vibration on human and ecological receptors including avoiding areas of key sensitivity and ensuring work is carried out in accordance with a Noise and Vibration Management Plan. Following the incorporation of such commitments no significant effects have been identified in relation to noise and vibration.

5.10 Traffic and Transport

[PEIR Chapter 27 \(document 6.1.27\) comprises the assessment for potential impacts of the Project on traffic and transport.](#)

5.10.1 The traffic assessment considered the potential impacts associated with an increase in construction traffic and potential disruption to the National Railway where the ECC may cross the line. The scope of the assessment was agreed with the Planning Inspectorate in their Scoping Opinion from August 2022¹. The assessment considers construction impacts only as once constructed there would be no significant levels of traffic movements.

5.10.2 The assessment was informed by both desk-based assessments, site visits and a collection of existing traffic flow and collision data. The assessment takes into account forecast construction traffic generation (e.g. Heavy Goods Vehicles and construction personnel) and the proposed access locations required to construct the Project.

5.10.3 The assessment covers a range of issues including: driver delay; severance; pedestrian amenity; accidents and road safety; and abnormal loads. Ninety separate transport links, including both main A roads and

more local routes, twenty construction access points, 23 highway links and 42 Public Rights of Way, have been assessed.

5.10.4 The Project has made a number of commitments to reduce and minimise impacts from traffic and transport including the implementation of a Construction Traffic Management Plan and Public Access Management Plan. Roads will not be fully closed to install the cable and a trenchless technique (such as horizontal direction drilling) will be utilised for the installation of the export cable under a number of roads, including the main A roads in the study area. Following the incorporation of such commitments no significant effects have been identified in relation to traffic and transport.

5.11 Landscape and Visual Assessment

PEIR Chapter 28 (document 6.1.28) comprises the assessment for potential impacts on Landscape and visual receptors.

5.11.1 The eastern part of Lincolnshire, within which the Landscape and Visual Impact Assessment study area occurs, is characterised by the flat coastal plains of the reclaimed marshes in the north and the fens in the south. Coastal towns and resorts occur in the northern part of the Landscape and Visual Impact Assessment study area, where there are beaches and dune landscapes. Inland from the coastline, the landscape of the study area is largely characterised by agricultural lowland landscapes, with fields of arable and improved pasture and some enclosure from hedgerows and localised tree cover. Large parts of this farmed landscape have been reclaimed from marshland, which is evident in the flatness of the landscape and extent of drainage ditches and channelised river courses.

5.11.2 The assessment for the Project primarily considered the physical effects to agricultural land, effects to the landscape character and visual amenity as a result of the onshore substation (OnSS). During the O&M phase of the OnSS, the effects to the visual amenity and landscape character as a result of the presence of the OnSS and any mitigation or replacement planting. Whilst details regarding the decommissioning of the OnSS are unknown, considering the worst-case assumption (which would

be the removal and reinstatement of the current land use at the OnSS site) it is anticipated that the impacts would be similar to or less than those assessed during construction.

5.11.3 The Project has made a number of commitments to reduce and minimise the impacts to the landscape and visual receptors through the design, development and site selection process which considered the constraints associated with the current landscape features, development and adherence to the CoCP which include measures to reduce temporary disturbance and incorporation of good practice measures. An outline Landscape and Ecological Design Principles Plan has been drafted (document 8.07) which sets out the principles of the landscape and ecological elements of the project.

5.11.4 Outline planting plans will be developed for the OnSS site and these will be set out within the outline Landscape and Ecological Design Principles Plan.

5.11.5 Visualisations have been drafted based on Photomontages. A photomontage is a visualisation which superimposes an image of a Project upon a photograph or series of photographs. Photomontage is a widespread and popular visualisation technique, which allows changes in views and visual amenity to be illustrated and assessed, within known views of the 'real' landscape.

5.11.6 Photographs and photomontages have been prepared for 14 viewpoints and visualisation figures can be found in Appendix 28.1 (document 6.2.28.1).

Appendix 1 Phase 2 Consultation Document List

Part 1: Guide to the Phase 2 Consultation Submission

Reference No.	Document Title	Summary of Content
1.1	Guide to the Phase Two Consultation Submission	This document provides a summary of the Phase 2 Consultation documentation, where it can be accessed and how to find the information or content you are searching for.

Part 2: Draft Plans and Drawings

Reference No.	Document Title	Summary of Content
2.1	Draft Works Plans Onshore	Plan showing the Onshore and Landfall works as detailed in the draft DCO.
2.2	Draft Works Plans Offshore	Plan showing the Offshore and Landfall works as detailed in the draft DCO.
2.3	Draft Location Plan Onshore	Plan showing the Project Location Onshore.
2.4	Draft Location Plan Offshore	Plan showing the Project Location Offshore.
2.5	Draft Public Rights of Way Plan	Plan showing Public Rights of Way within proximity to the Project, including footpaths, bridleways and restricted byways.
2.6	Draft Historic Environment Plan Onshore	Plan showing the Historical assets alongside the Project PEIR boundary including Listed Buildings, Scheduled Monuments and registered historic sites.

Reference No.	Document Title	Summary of Content
2.7	Draft Statutory and Non-Statutory Nature Conservation Sites Onshore	Plan showing conservation sites onshore alongside the current Project boundary for context.
2.8	Draft Statutory and Non-Statutory Nature Conservation Sites Offshore	Plan showing conservation sites offshore alongside the current Project boundary for context, with a wider UK Plan showing other Conservation Sites.
2.9	Draft Onshore Crossings Plan	Plan showing where the Project may cross existing onshore assets, to be refined as the Project design progresses. This should be viewed alongside document 8.1.9 which is a table of all assets potentially being crossed within the PEIR Boundary.
2.10	Draft Offshore Crossings Plan	Plan showing where the Project may cross existing offshore assets, to be refined as the Project design progresses. This should be viewed alongside document 8.1.8 which is a table of all assets potentially being crossed within the PEIR Boundary.

Part 3: Draft Development Consent Order

Reference No.	Document Title	Summary of Content
3.1	Draft Development Consent Order	The first draft of the Development Consent Order (DCO), to be consulted on with statutory Stakeholders. The final DCO will be provided by the

Reference No.	Document Title	Summary of Content
		Secretary of State to the Applicant upon Consent Award.

Part 4: Scoping Report

Reference No.	Document Title	Summary of Content
4.1	Scoping Report	A full copy of the previously submitted Scoping Report (June 2022) for reference. Following publication of the Scoping Report, Outer Dowsing received a Scoping Opinion which detailed the items required for assessment within the DCO Application and consultation.

Part 5: Consultation Summary

Reference No.	Document Title	Summary of Content
5.1	Consultation Summary	A document summarising consultation to date and sign posting to where specific detail can be found
5.1.1	Statement of Community Consultation	The consultation on the SoCC, and a copy of the final SoCC as drafted and agreed in consultation with the local authorities
5.1.2	Formal Notices	A list of the formal notices for consultation to date
5.1.3	Phase 1 Consultation Documentation	A summary of Phase 1 consultation documentation.
5.1.4	Phase 1A Consultation Documentation	A summary of the Phase 1A consultation documentation.

Reference No.	Document Title	Summary of Content
5.1.5	Community Liaison Group Documentation	A summary of the presentations and minutes of engagement to date with the Community Liaison Groups.

Part 6 Preliminary Environmental Information Report

Reference No.	Document Title	Summary of Content
6.1	Non-Technical Summary	A standalone document providing an overview of the Project and a summary of the main findings of the Environmental Impact Assessment

Chapters 1 – 6 and their appendices are introductory documents. They set out the background to the Project, including the policy context, site selection, methodology and Consultation Process.

6.1.1	Introduction	An introduction to the Project, the partners, and the PEIR consultation.
6.1.2	Need, Policy and Legislative Context	An overview of relevant policy and legislation pertaining to the Project and the need for offshore wind.
6.1.3	Project Description	A document providing detail of the maximum Project engineering parameters.
6.2.3.1	Cable Burial Risk Assessment	A technical appendix detailing the cable burial risks within the Inner Dowsing Race Bank and North Ridge Special Area of Conservation.
6.2.3.2	Underwater Noise Assessment	A technical appendix of the worst case scenario Project parameters assessed regarding underwater noise.
6.2.3.3	Onshore Substation Design Principles	A summary of the Project's design principles for the Onshore Substation (OnSS).

Reference No.	Document Title	Summary of Content
6.1.4	Site Selection and Consideration of Alternatives	A document providing an overview of options considered during the Site Selection process.
6.2.4.1	Landfall Assessment & Offshore ECC Route Optioneering	A document providing the full assessment relating to Identification of the Landfall Zones, Export cable Landfall Options and Offshore ECC Route Options.
6.1.5	EIA Methodology	A document detailing the methodology used to undertake the environmental Impact Assessment.
6.2.5.1	Cumulative Effects Assessment Longlist Offshore	An assessment of the potential effects of other projects also currently in planning which may result in cumulative impacts on a receptor.
6.2.5.2	Cumulative Effects Assessment Longlist Onshore	An assessment of the potential effects of other projects also currently in planning which may result in cumulative impacts on a receptor.
6.1.6	Consultation Process	A Chapter detailing the Consultation Process specifically related to the Environmental Impact Assessment.
Chapters 7 – 18 and their associated appendices, are technical chapters and reports containing detailed assessments for each offshore topics.		
6.1.7	Marine Physical Processes	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible

Reference No.	Document Title	Summary of Content
		additional mitigation measures and conclusions based on the current project parameters.
6.2.7.1	Physical Processes Technical Baseline	A technical appendix of baseline information to support the chapter.
6.2.7.2	Physical Processes Modelling Report	A technical modelling report appendix to support the chapter.
6.1.8	Marine Water and Sediment Quality	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.8.1	Water Framework Directive	The document presents the findings of the Water Framework Directive Compliance Assessment.
6.1.9	Benthic and Intertidal Ecology	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.9.1	Benthic Ecology Technical Report (Array)	A technical appendix of baseline survey information to support the chapter.

Reference No.	Document Title	Summary of Content
6.2.9.2	Benthic Ecology Technical Report (ECC)	A technical appendix of baseline survey information to support the chapter.
6.2.9.3	Intertidal Technical Report	A technical appendix of baseline survey information to support the chapter.
6.2.9.4	Marine Conservation Zone Assessment	A technical appendix assessing baseline information relating to Marine Conservation Zones, the to support the chapter.
6.1.10	Fish and Shellfish Ecology	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.10.1	Fish and Shellfish Ecology Technical Baseline	A technical appendix of baseline information to support the chapter.
6.1.11	Marine Mammals	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.11.1	Marine Mammals	A technical appendix of baseline information to support the chapter.

Reference No.	Document Title	Summary of Content
	Technical Baseline	
6.1.12	Offshore and Intertidal Ornithology	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.12.1	Ornithology Technical Baseline	A technical appendix of baseline information to support the chapter.
6.2.12.2	Collision Risk Modelling Assessment Annex	A technical appendix of modelled data and an assessment to support the chapter.
6.2.12.3	Displacement Assessment Annex	A technical appendix of modelled data and an assessment to support the chapter.
6.1.13	Marine and Intertidal Archaeology	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.13.1	Marine and Intertidal Archaeological Technical Report	A technical appendix of baseline information to support the chapter.

Reference No.	Document Title	Summary of Content
6.1.14	Commercial Fisheries	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.14.1	Commercial Fisheries Technical Report	A technical appendix of baseline information to support the chapter.
6.1.15	Shipping and Navigation	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.15.1	Navigational Risk Assessment	A technical assessment of baseline information, assessed to support the chapter.
6.1.16	Aviation, Radar, Military and Communication	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.

Reference No.	Document Title	Summary of Content
6.2.16.1	Aviation Technical Report	A technical appendix of baseline information to support the chapter.
6.1.17	Seascape, Landscape and Visual	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.17.1	SLVIA Methodology	A technical appendix detailing the methodology used to undertake the assessment in the chapter.
6.2.17.2	SLVIA Figures, Wirelines and Visualisations	A technical appendix of the visualisations to support the chapter assessment and conclusions.
6.1.18	Marine Infrastructure and Other Users	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.18.1	Helicopter Access Report	A report detailing baseline and impact assessment of potential impacts of the project on helicopter operations to existing offshore installation.

Chapters 19 – 29 and their associated appendices, are technical chapters and reports containing detailed assessments for each offshore topics.

Reference No.	Document Title	Summary of Content
6.1.19	Onshore Air Quality	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.19.1	Onshore Air Quality Construction Phase Dust Assessment Methodology	A technical appendix detailing the methodology used in the assessment within the chapter.
6.2.19.2	Non-Road Mobile Machinery Emissions Assessment	A technical appendix detailing the assessment of non-road mobile machinery emissions to support the chapter.
6.2.19.3	Offshore Activities Assessment	A technical appendix to inform the assessment of potential onshore air quality impacts arising from offshore activities generated by the Project, to support the chapter
6.1.20	Onshore Archaeology and Cultural Heritage	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.

Reference No.	Document Title	Summary of Content
6.2.20.1	Onshore Archaeology and Cultural Heritage Desk-Based Assessment	A technical appendix of baseline information to support the chapter.
6.2.20.2	Onshore Archaeology and Cultural Heritage Statement	A technical appendix detailing the results of a preliminary Heritage Desk Based Assessment prepared in respect to potential indirect effects on heritage assets to support the chapter assessment.
6.1.21	Onshore Ecology	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.21.1	Onshore Ecology Ecological Desk-Based Assessment	A technical appendix of baseline information to support the chapter.
6.2.21.2	Initial Habitat Survey	A technical appendix of survey results to support the chapter.
6.2.21.3	Preliminary Roost Surveys for Bats	A technical appendix of survey results to support the chapter.
6.2.21.4	Badger Surveys (Confidential)	Issued confidentially to relevant statutory stakeholders only.

Reference No.	Document Title	Summary of Content
6.1.22	Onshore Ornithology	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.22.1	Ornithology Desk Study	A technical appendix of baseline information to support the chapter
6.2.22.2	Ornithology Desk Study Annex (Confidential)	Issued confidentially to relevant statutory stakeholders only.
6.2.22.3	Winter Bird Survey 2022 - 2023	A technical appendix of survey results to support the chapter
6.2.22.4	Bird Species List	A species list to support the chapter
6.1.23	Geology and Ground Conditions	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.1.24	Hydrology, Hydrogeology and Flood Risk	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and

Reference No.	Document Title	Summary of Content
		conclusions based on the current project parameters.
6.1.25	Land Use	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.1.26	Noise and Vibration	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.26.1	Sound Level Meter Calibration Certificates	A technical appendix detailing the noise and vibration monitoring locations assessed in the chapter
6.2.26.2	Full Baseline Survey Results	A technical appendix of baseline information to support the chapter.
6.2.26.3	Construction plant list	A technical appendix of information to support the chapter.
6.2.26.4	Noise model outputs	A technical appendix of modelling information to support the chapter.
6.1.27	Traffic and Transport	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible

Reference No.	Document Title	Summary of Content
		additional mitigation measures and conclusions based on the current project parameters.
6.2.27.1	Traffic and Transport Technical Baseline Report	A technical appendix of baseline information to support the chapter.
6.2.27.2	Traffic and Transport Trip Generation	A technical appendix of modelling information to support the chapter.
6.1.28	Landscape and Visual Assessment	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.28.1	Landscape and Visual Assessment Visualisations	A technical appendix of the visualisations to support the chapter assessment and conclusions.
Chapter 29 – 31 and their associated appendices, are technical chapter and Baseline Reports which detail the Wider Topics		
6.1.29	Socio-Economic Characteristics	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.

Reference No.	Document Title	Summary of Content
6.1.30	Human Health	A technical chapter which includes baseline information, a summary of topic specific consultation to date, an assessment of worst case scenario impacts, embedded and possible additional mitigation measures and conclusions based on the current project parameters.
6.2.30.1	Population Baseline	A technical appendix of baseline information to support the chapter.
6.1.31	Climate Change	A technical chapter presenting the results to date of the assessment for the potential impacts of Outer Dowsing Offshore Wind on Climate Change.

Part 7: Draft Report to Inform Appropriate Assessment

Reference No.	Document Title	Summary of Content
7.1	Draft Without Prejudice Report to Inform Appropriate Assessment	The Draft Report to Inform Appropriate Assessment (RIAA) is a technical document drafted as part of the Habitats Regulations Assessment. It details the habitat types and species for which the sites are protected, relevant to the Project and examines the implications of the proposed project on designated features present on that site and the conservation objectives of the site.
7.2	Draft Without Prejudice	This document outlines the 'without prejudice' benthic compensation options

Reference No.	Document Title	Summary of Content
	Benthic Compensation Strategy	being considered by the Project. It discusses the proposed road map and strategy towards developing the final compensation options to support the 'without prejudice' derogation case should it be required.
7.3	Draft Without Prejudice Offshore Ornithology Compensation Strategy	This document outlines the 'without prejudice' ornithology compensation options being considered by the Project. It discusses the proposed road map and strategy towards developing the final compensation options to support the 'without prejudice' derogation case should it be required.
7.4	Draft Without Prejudice Offshore Artificial Nesting Structures Ecological evidence and roadmap	This document outlines the ecological evidence base for Artificial Nesting Structures and sets out a road map and strategy towards developing this as a final compensation option to support the 'without prejudice' derogation case should it be required.
7.5	Draft Without Prejudice Predator Reduction Ecological Evidence and Roadmap	This document outlines the ecological evidence base for Predator Control Ecological Evidence and sets out a road map and strategy towards developing this as a final compensation option to support the 'without prejudice' derogation case should it be required.
7.6	Draft Without Prejudice Fisheries Management	This document outlines the ecological evidence base for Fisheries management and sets out a road map and strategy towards developing this as a final

Reference No.	Document Title	Summary of Content
	Ecological Evidence and Roadmap	compensation option to support the 'without prejudice' derogation case should it be required.

Part 8: Other Reports, Plans and Statements

Reference No.	Document Title	Summary of Content
8.1.1	Outline Noise and Vibration Management Plan	A high level outline plan to manage Noise and Vibration and reduce impacts. This will from part of the Outline Code of Construction Practice to be submitted as part of the DCO Application
8.1.2	Air quality management plan	A high level outline plan to manage Air Quality and reduce impact. This will from part of the Outline Code of Construction Practice to be submitted as part of the DCO Application
8.1.3	Outline Soil management plan	A high level outline plan to manage Soils and reduce impacts. This will from part of the Outline Code of Construction Practice to be submitted as part of the DCO Application
8.1.4	Outline Pollution Prevention and Emergency Incident Response Plan	A high level outline plan to prevent pollution and response in the event of an emergency occurrence. This will from part of the Outline Code of Construction Practice to be submitted as part of the DCO Application
8.1.5	Outline Construction Traffic	A high level outline plan to manage construction traffic and reduce impacts. This will from part of the Outline Code of

Reference No.	Document Title	Summary of Content
	Management Plan	Construction Practice to be submitted as part of the DCO Application
8.1.6	Outline Travel Plan	A high level outline plan to manage project related travel. This will form part of the Outline Code of Construction Practice to be submitted as part of the DCO Application
8.1.7	Outline Public Access Management Plan	A high level outline plan to manage Public Access and reduce impacts. This will form part of the Outline Code of Construction Practice to be submitted as part of the DCO Application
8.1.8	Outline Preliminary Crossing Schedule Offshore	A Tabulated Schedule of every potential offshore crossing within the PEIR Boundary, which aligns with Plan 2.10. This will form part of the Outline Code of Construction Practice to be submitted as part of the DCO Application
8.1.9	Outline Preliminary Crossing Schedule Onshore	A Tabulated Schedule of every potential onshore crossing within the PEIR Boundary, which aligns with Plan 2.9. This will form part of the Outline Code of Construction Practice to be submitted as part of the DCO Application.
8.1.10	Outline Artificial Light Emissions Management Plan	A high level outline plan for Artificial Light emissions. This will be updated and will form part of the Outline Code of Construction Practice to be submitted as part of the DCO Application.
8.2	Planning Statement	A summary of the relevant Planning and Policy guidance and their relevance to the Project.

Reference No.	Document Title	Summary of Content
8.3	Outline Biodiversity and Marine Net Gain Principles and Approach	A high level summary document outlining the evolving policy context to Biodiversity and Marine Net Gain and the Project's approach to Biodiversity Net Gain and the principles of Marine Net Gain.
8.4	Outline Marine Mammal Mitigation Protocol	The Outline Marine Mammal Mitigation Protocol (MMMP) sets out the potential contingency measures which may be proposed to reduce the risk of permanent threshold shift (PTS) auditory injury to marine mammal species from pile driving activity at the Project.
8.5	Outline Marine Archaeological Written Scheme of Investigation	A document that forms the basis for mitigation and agreement between the Applicant, its contractors, and relevant regulators for known and potential marine and intertidal archaeological and cultural heritage receptors.
8.6	Outline Onshore Archaeological Written Scheme of Investigation	A document that forms the basis for mitigation and agreement between the Applicant, its contractors, and relevant regulators for known and potential onshore archaeological and cultural heritage receptors.
8.7	Landscape and Ecology Design Principles Plan	A document detailing the Project's design principles in relation to Landscape and Ecology Design. This information will be updated and included Outline Landscape and Ecology Mitigation Scheme submitted as part of the DCO Application.