

The background image is a photograph of a coastal landscape. In the foreground, there is a sandy path or dune area with patches of dry, yellowish-brown grass. The path leads towards a flat, sandy beach that meets the ocean. The sky is filled with soft, white and grey clouds, suggesting an overcast or hazy day. The overall tone is natural and serene.

Outer Dowsing Offshore Wind

Environmental Statement

Chapter 17 Seascape, Landscape and Visual Impact Assessment

Volume 1

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Acronyms & Terminology

Abbreviations/Acronyms

Acronym	Expanded name
ANS	Artificial Nesting Structure
AONB	Area of Outstanding Natural Beauty
CAA	Civil Aviation Authority
CEA	Cumulative Effects Assessment
CNP	CNP
CPRE	Campaign to Protect Rural England
CRoW	Countryside and Rights of Way Act 2000
DCO	Development Consent Order
DECC	Department of Energy & Climate Change, now the Department for Energy Security and Net Zero (DESNZ)
DEP	Dudgeon Extension Project
DESNZ	Department for Energy Security and Net Zero, formerly Department of Business, Energy and Industrial Strategy (BEIS), which was previously Department of Energy & Climate Change (DECC)
DTM	Digital Terrain Model
ECC	Export Cable Corridor
EEA	European Economic Area
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Technical Group
EU	European Union
GIS	Geographic Information System
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GT R4 Ltd	The Applicant. The special project vehicle created in partnership between Corio Generation (a wholly owned Green Investment Group portfolio company), Gulf Energy Development and TotalEnergies
HVAC	high voltage alternating current
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IPCC	Intergovernmental Panel on Climate Change
LAT	Lowest Astronomical Tide
LCA	Landscape Character Area
LCCNNR	Lincolnshire Coronation Coast National Nature Reserve
LCT	Landscape Character Type
LLA	Local Landscape Area
LVIA	Landscape Visual Impact Assessment
MCA	Maritime and Coastguard Agency
MDS	Maximum Design Scenario
METAR	Meteorological Aerodrome Report

Acronym	Expanded name
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
MOD	Ministry of Defence
NCA	National Character Area
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NRW	Natural Resources Wales
NSIP	Nationally Significant Infrastructure Project
ODOW	Outer Dowsing Offshore Wind (The Project)
OP	Offshore Platform
ORBA	Offshore Restricted Build Area
ORCP	Offshore Reactive Compensation Platform
OS	Ordnance Survey
OSS	Offshore Substation
OWF	Offshore Windfarm
PEIR	Preliminary Environmental Information Report
RAF	Royal Air Force
RCS	Reactive Compensation Station
RPG	Registered Park and Garden
SCA	Seascape Character Area
SEP	Sheringham Extension Project
SLVIA	Seascape, Landscape and Visual Impact Assessment
SoS	Secretary of State
WCS	Worst Case Scenario
WTG	Wind Turbine Generator
ZTV	Zone of Theoretical Visibility

Terminology

Term	Definition
Array area	The area offshore within which the generating station (including wind turbine generators (WTG) and inter array cables), offshore accommodation platforms, offshore transformer substations and associated cabling will be positioned -, including the ORBA.
Baseline	The status of the environment at the time of assessment without the development in place.
Cumulative effects	The combined effect of the Project acting additively with the effects of other developments, on the same single receptor/resource.
Cumulative impact	Impacts that result from changes caused by other past, present or reasonably foreseeable actions together with the Project.
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the sensitivity of the receptor, in accordance with defined significance criteria.

Term	Definition
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 EIA Regulations, including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	The suite of documents that detail the processes and results of the Environmental Impact Assessment (EIA).
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Intertidal	The area between Mean High Water Springs (MHWS) and Mean Low Water Springs (MLWS)
Landfall	The location at the land-sea interface where the offshore export cables and fibre optic cables will come ashore.
Maximum Design Scenario	The project design parameters, or a combination of project design parameters that are likely to result in the greatest potential for change in relation to each impact assessed
Mitigation	Mitigation measures 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 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 Order Limits within which the export cables running from the array to landfall will be situated.
<u>Offshore Restricted Build Area (ORBA)</u>	<u>The area within the array area, where no wind turbine generator, offshore transformer substation or offshore accommodation platform shall be erected.</u>
Offshore Reactive Compensation Station (ORCP)	A structure attached to the seabed by means of a foundation, with one or more decks and a helicopter platform (including bird deterrents) housing electrical reactors and switchgear for the purpose of the efficient transfer of power in the course of HVAC transmission by providing reactive compensation
Offshore Substation (OSS)	A structure attached to the seabed by means of a foundation, with one or more decks and a helicopter platform (including bird deterrents), containing— (a) electrical equipment required to switch, transform, convert electricity generated at the wind turbine generators to a higher voltage and provide reactive power compensation; and (b) housing accommodation, storage, workshop auxiliary equipment, radar and facilities for operating, maintaining and controlling the substation or wind turbine generators
Outer Dowsing Offshore Wind (ODOW)	The Project.
Order Limits:	The area subject to the application for development consent, The limits shown on the works plans within which the Project may be carried out.

Term	Definition
Preliminary Environmental Information Report (PEIR)	The PEIR was written in the style of a draft Environmental Statement (ES) and provided information to support and inform the statutory consultation process during the pre-application phase.
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.
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.
The Applicant	GT R4 Ltd. The Applicant making the application for a DCO. — The Applicant is GT R4 GTR4 Limited (a joint venture between Corio Generation, TotalEnergies (and its affiliates), TotalEnergies and Gulf Energy Development (GULF)) , trading as Outer Dowsing Offshore Wind. The Project is being developed by Corio Generation (a wholly owned Green Investment Group portfolio company), TotalEnergies and GULF.
The Project	Outer Dowsing Offshore Wind including proposed onshore and offshore infrastructure.
Transboundary impacts	Transboundary effects arise when impacts from the development within one European Economic Area (EEA) state affects the environment of another EEA state(s).
Wind Turbine Generator (WTG)	A structure comprising a tower, rotor with three blades connected at the hub, nacelle and ancillary electrical and other equipment which may include J-tube(s), transition piece, access and rest platforms, access ladders, boat access systems, corrosion protection systems, fenders and maintenance equipment, helicopter landing facilities and other associated equipment, fixed to a foundation.

Reference Documentation

Document Number	Title	Most Recent Examination Reference
6.1.2	Need, Policy and legislative context	APP-056
6.1.3	Project Description	V2 Submitted at Deadline 5
6.1.4	Site Selection and Consideration of Alternatives	V2 Submitted at Deadline 5
6.1.5	EIA Methodology	V2 Submitted at Deadline 5
6.1.6	Technical Consultation Report	APP-061
6.1.20	Onshore Archaeology and Cultural Heritage	V2 Submitted at Deadline 5
6.1.28	Landscape and Visual Assessment	REP4a-025
6.1.29	Socio-Economic Characteristics	REP4a-027
6.1.31	Climate Change	V2 Submitted at Deadline 5
8.23	Outline ORCP Lighting Management Plan	REP4-081
21.16	ORCP Design Principles Statement	REP4a-112

17 Seascape, Landscape and Visual

17.1 Introduction

1. This chapter of the Environmental Statement (ES) presents the results of the Environmental Impact Assessment (EIA) process for the potential impacts of Outer Dowsing Offshore Wind ('the Project') on seascape, landscape and visual receptors. This chapter comprises the Seascape, Landscape and Visual Impact Assessment (SLVIA) for the Project. Specifically, this chapter considers the potential impact of elements of the Project located seaward of Mean High Water Springs (MHWS) during the construction, operation and maintenance, and decommissioning phases in relation to onshore and offshore landscape, seascape and visual receptors.
2. GT R4 Limited (trading as Outer Dowsing Offshore Wind) hereafter referred to as the 'Applicant', is proposing to develop the Project. The Project array area will be located approximately 54km from the Lincolnshire coastline in the southern North Sea. The Project will include both offshore and onshore infrastructure including an offshore generating station (windfarm), export cables to landfall, Offshore Reactive Compensation Platforms (ORCPs), onshore cables, connection to the electricity transmission network, ancillary and associated development and areas for the delivery of up to two Artificial Nesting Structures (ANS) and the creation of a biogenic reef (if these compensation measures are deemed to be required by the Secretary of State) (see Volume 1, Chapter 3: Project Description (~~Document Reference~~[document reference](#) 6.1.3) for full details).
3. The array area for the Project will be located approximately 54km from the Lincolnshire coastline in the southern North Sea. The ORCPs will be located approximately 12km from the closest part of the Lincolnshire coastline.
4. This chapter comprises a relatively concise chapter in the ES. This proportionate approach to the SLVIA has been influenced by the long distance between the array area and the coastline, where the highest concentration of landscape and visual receptors occur.
5. The visualisations and figures developed to inform the assessment are included in Volume 2, Appendix 17.1: SLVIA Figures (~~Document Reference~~[document reference](#) 6.2.17).

17.2 Statutory and Policy Context

6. This section identifies the legislation, policy and other documentation that has informed the assessment of effects with respect to seascape, landscape and visual. Further information on policies relevant to the EIA and their status is provided in Volume 1, Chapter 2: Need, Policy and legislative context (~~Document Reference~~[document reference](#) 6.1.2) of this ES.
7. The relevant legislation and planning policy for offshore renewable energy Nationally Significant Infrastructure Projects (NSIPs), specifically in relation to SLVIA, is outlined in Table 17.1 below:

Table 17.1 Legislation and policy context

Legislation/policy	Key provisions	Section where comment addressed
National Parks and Access to the Countryside Act 1949	<p>National Parks and Access to the Countryside Act 1949 provided the framework for the establishment of National Parks and Areas of Outstanding Natural Beauty (AONB).</p> <p>The purpose of the provisions of Part II Section 5 of this Act is to conserve and enhance the natural beauty, wildlife and cultural heritage of specified areas of country in England, and to promote opportunities for the understanding and enjoyment of the special qualities of those areas by the public.</p> <p>While the 1949 Act established the framework for AONBs, in turn, the Countryside and Rights of Way Act 2000 (CRoW) amended the provisions relating to AONBs (as set out below).</p> <p>This Act places a duty on any “relevant authority” including, for example, any public body, such as Councils, statutory undertakers and in the context of the DCO, the Secretary of State (SoS), to have regard to the purposes for which National Parks are designated.</p>	The Project has the potential to have adverse effects on the Lincolnshire Wolds AONB and the Norfolk Coast AONB. These potential effects are addressed in Section 17.7.
Countryside and Rights of Way Act 2000 (CRoW)	<p>Countryside and Rights of Way Act 2000 (CRoW) amended the provisions relating to AONBs, and AONBs are designated under CRoW. Section 82(1) of CRoW defines an AONB in England as an area which is not in a National Park but is of such outstanding natural beauty that it is desirable that the protective provisions of Part IV of The Countryside and Rights</p>	The Project has the potential to have adverse effects on the Lincolnshire Wolds AONB and the Norfolk Coast AONB. These potential effects are addressed in Section 17.7.

Legislation/policy	Key provisions	Section where comment addressed
	<p>of Way Act 2000 should apply to it. Natural England may, for the purpose of conserving and enhancing the natural beauty of the area, by order designate such an area for the purposes of this Part as an AONB.</p> <p>From 22 November 2023 AONBs have also been called National Landscapes, although the legal designation remains AONB. The term AONB is used throughout this chapter.</p> <p>The UK Government current online Guidance on AONBs confirms with regard to the above legislation that (https://www.gov.uk/guidance/areas-of-outstanding-natural-beauty-aonbs-designation-and-management): <i>“An AONB is land protected by the Countryside and Rights of Way Act 2000 (CROW Act). It protects the land to conserve and enhance its natural beauty”.</i></p>	
Levelling-up and Regeneration Act 2023	Levelling-up and Regeneration Act 2023 amended the provisions relating to AONBs. This sets out that a “relevant authority” “must seek to further the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty”.	The Project has the potential to have adverse effects on the Lincolnshire Wolds AONB and the Norfolk Coast AONB. These potential effects are addressed in Section 17.7.
Overarching National Policy Statement for	3.3.62 Government has concluded that there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure. Section 4.2 states which energy	The project has applied the mitigation hierarchy through the embedded measures incorporated within the project design. The design of the

Legislation/policy	Key provisions	Section where comment addressed
Energy (EN-1), (DESNZ, November 2023a)	generating technologies are low carbon and are therefore CNP infrastructure.	Project is explained in Chapter 3 (Document Reference document reference 6.1.3) and Chapter 4 (Document Reference document reference 6.1.4) of the ES.
	<p>3.3.63 Subject to any legal requirements, the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy. Government strongly supports the delivery of CNP Infrastructure and it should be progressed as quickly as possible.</p> <p>4.3.11 In some instances, it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in its application which elements of the proposal have yet to be finalised, and the reasons why this is the case.</p> <p>4.3.12 Where some details are still to be finalised, the ES should, to the best of the applicant's knowledge, assess the likely worst-case environmental, social and economic effects of the proposed development to ensure that the impacts of the project as it may be constructed have been properly assessed.</p>	

Legislation/policy	Key provisions	Section where comment addressed
	5.10.1 The landscape and visual effects of energy projects will vary on a case by case basis according to the type of development, its location and the landscape setting of the proposed development. In this context, references to landscape should be taken as covering seascape and townscape where appropriate.	Section 17.7 address both seascape and landscape as well as the varied visual effects.
	5.10.4 Landscape effects arise not only from the sensitivity of the landscape but also the nature and magnitude of change proposed by the development, whose specific siting and design make the assessment a case-by-case judgement.	Section 17.7 assesses both the sensitivity of landscape, seascape and visual receptors; and the magnitude of change resulting from the Project, and provides a conclusion (based on the criteria set out in Volume 3, Appendix 17.1 SLVIA Methodology and professional judgement) on the level of landscape and visual effects of the Project..
	5.10.5 Virtually all nationally significant energy infrastructure projects will have adverse effects on the landscape, but there may also be beneficial landscape character impacts arising from mitigation. 5.10.6 Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.	The key mitigation relevant to the SLVIA comprises the separation distance between the array area and the coastline and also ensuring a minimum distance of 12km between the ORCPs and the closest coastline. The embedded mitigation is described in Section 17.5.3. Potential impacts on seascape, landscape and visual receptors are assessed in Section 17.7. The design principles for the ORCP are

Legislation/policy	Key provisions	Section where comment addressed
		considered in ORCP Design Principles Statement (document reference 21.16). In addition, measures relevant to lighting are described in the Outline ORCP Lighting Management Plan, document reference 8.23.
	5.10.7 National Parks, the Broads and AONBs have been confirmed by the government as having the highest status of protection in relation to landscape and natural beauty. Each of these designated areas has specific statutory purposes. Projects should be designed sensitively given the various siting, operational, and other relevant constraints.	The effects of the Project on the Lincolnshire Wolds AONB and Norfolk Coast AONB are assessed in Section 17.7. No National Parks, or the Broads, would be affected by the Project.
	5.10.8 The duty to seek to further the purposes of nationally designated landscapes also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. In these locations, projects should be sensitively given the various siting, operational, and other relevant constraints. The Secretary of State should be satisfied that measures which seek to further the purposes of the designation are sufficient, appropriate and proportionate to the type and scale of the development.	The potential for the Project to impact upon the nationally designated areas has been considered in Section 17.7. Regard has been paid to the purpose and special qualities of these nationally designated landscapes.
	5.10.10 Heritage Coasts are defined areas of undeveloped coastline which are managed to conserve their natural beauty and, where appropriate, to improve accessibility for visitors.	The potential for the Project to impact upon Heritage Coasts has been considered in Section 17.7.

Legislation/policy	Key provisions	Section where comment addressed
	5.10.11 Development within a Heritage Coast (that is not also a National Park, The Broads or an AONB) is unlikely to be appropriate, unless it is compatible with the natural beauty and special character of the area.	The ambition for a Lincolnshire Heritage Coast is acknowledged, with further detail provided in Table 17.2.
	5.10.12 Outside nationally designated areas, there are local landscapes that may be highly valued locally. Where a local development document in England or a local development plan in Wales has policies based on landscape or waterscape character assessment, these should be paid particular attention. However, locally valued landscapes should not be used in themselves to refuse consent, as this may unduly restrict acceptable development.	The value of the local landscape is a consideration within the assessment of effects on landscape and seascape character in Section 17.7. This includes regard to the character, features and special qualities of locally designated landscapes.
	5.10.13 All proposed energy infrastructure is likely to have visual effects for many receptors around proposed sites. 5.10.14 The Secretary of State will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the project. 5.10.15 Coastal areas are particularly vulnerable to visual intrusion because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast.	The impacts on seascape, landscape and visual receptors are assessed in Section 17.7. This includes consideration of visibility from undeveloped coast. The benefits (including need) of the Project are set out in Chapter 2 (Document Reference document reference 6.1.2).

Legislation/policy	Key provisions	Section where comment addressed
	5.10.16 The applicant should carry out a landscape and visual impact assessment and report it in the ES, including cumulative effects (see Section 4.3). Several guides have been produced to assist in addressing landscape issues.	The guidance that has been considered/followed in preparing this chapter, includes documents set out in the National Policy Statement for Energy (EN-1) and is set out in Section 17.6.
	5.10.17 The landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development documents in England and local development plans in Wales.	Section 17.7 takes into account the relevant landscape and seascape character assessments, and associated relevant policies based on these, as listed in Table 17.3.
	5.10.18 For seascapes, applicants should consult the Seascape Character Assessment and the Marine Plan Seascape Character Assessments, and any successors to them.	
	5.10.20 The assessment should include the effects on landscape components and character during construction and operation. For projects which may affect a National Park, The Broads or an Areas of Outstanding Natural Beauty the assessment should include effects on the natural beauty and special qualities of these areas.	There are no effects on landscape components as a result of the offshore infrastructure of the Project. There are however potential effects on seascape components of landscape character, and perceived character of landscape designations and these are assessed in Section 17.7.

Legislation/policy	Key provisions	Section where comment addressed
	5.10.21 The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include light pollution effects, including on dark skies, local amenity, and nature conservation.	<p>The visual effects of the offshore elements of the Project during construction and operation, are addressed in Section 17.7. The principles associated with lighting the ORCPs are described in the Outline ORCP Lighting Management Plan (document reference 8.23.)</p> <p>The Planning Inspectorate has agreed that lighting effects associated with construction and decommissioning, together with aviation and marine navigation lighting within the array area can be scoped out of the SLVIA.</p>
	5.10.22 The assessment should also address the landscape and visual effects of noise and light pollution, and other emissions (see Section 5.2 and Section 5.7), from construction and operational activities on residential amenity and on sensitive locations, receptors and views, how these will be minimised.	<p>The Planning Inspectorate has agreed that lighting associated with construction and decommissioning phases, and also aviation and marine navigation lighting within the array area can be scoped out of the SLVIA. Lighting associated with the ORCPs is assessed in Section 17.7.</p>
	5.10.25 In considering visual effects it may be helpful for applicants to draw attention, in the supporting evidence to their applications, to any examples of existing permitted infrastructure they are aware of with a similar magnitude of	<p>Baseline Offshore Windfarms (OWFs) are referenced in Section 17.4 and Section 17.8.</p>

Legislation/policy	Key provisions	Section where comment addressed
	impact on equally sensitive receptors. This may assist the Secretary of State in judging the weight they should give to the assessed visual impacts of the proposed development.	
	5.10.26 Reducing the scale of a project can help to mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design of a proposed energy infrastructure project may result in a significant operational constraint and reduction in function – for example, electricity generation output. There may, however, be exceptional circumstances, where mitigation could have a very significant benefit and warrant a small reduction in function. In these circumstances, the Secretary of State may decide that the benefits of the mitigation to reduce the landscape and/or visual effects outweigh the marginal loss of function.	The Applicant has reduced the array area as part of the project refinements, which has been considered within this assessment.
	5.10.34 The duty to seek to further the purposes of nationally designated landscapes also applies when considering applications for projects outside the boundaries of these areas, which may have impacts within them. The aim should be to avoid harming the purposes of designation or to minimise adverse effects on designated landscapes, and such projects should be designed sensitively given the various siting, operational, and other relevant constraints. The fact that a proposed project will be visible from within a designated area	The potential for the Project to impact upon the nationally designated areas has been considered in Section 17.7. Regard has been paid to the purpose and special qualities of these nationally designated landscapes.

Legislation/policy	Key provisions	Section where comment addressed
	should not in itself be a reason for the Secretary of State to refuse consent.	
	5.10.35 The scale of energy projects means that they will often be visible across a very wide area. The Secretary of State should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project.	The potential effects on seascape and landscape receptors are addressed in Section 17.7. The benefits (including need) of the Project are set out in Chapter 2 (Document Reference document reference 6.1.2).
	5.10.36 In reaching a judgement, the Secretary of State should consider whether any adverse impact is temporary, such as during construction, and/or whether any adverse impact on the landscape will be capable of being reversed in a timescale that the Secretary of State considers reasonable.	Where the seascape, landscape and visual impacts of the Project are temporary or reversible, this is set out in Section 17.7.
Renewable Energy Infrastructure NPS EN-3 (DESNZ, November 2023b)	<p>2.1.7 As stated in Section 4.2 of EN-1, to support the urgent need for new low carbon infrastructure, all onshore and offshore electricity generation covered in this NPS that does not involve fossil fuel combustion are considered to be CNP Infrastructure.</p> <p>2.1.8 Applicants must show how any likely significant negative effects would be avoided, reduced, mitigated or compensated for, following the mitigation hierarchy.</p>	<p>The project has applied the mitigation hierarchy through the embedded measures incorporated within the project design. The design of the Project is explained in Chapter 3 (Document Referencedocument reference 6.1.3) and Chapter 4 (Document—Referencedocument reference 6.1.4) of the ES.</p> <p>The potential impacts on seascape, landscape and visual receptors are assessed in Section 17.7.</p>

Legislation/policy	Key provisions	Section where comment addressed
	<p>2.3.6 When considering applications for CNP Infrastructure in sites with nationally recognised designations (such as SSSIs, National Nature Reserves, National Parks, the Broads, Areas of Outstanding Natural Beauty, Registered Parks and Gardens, and World Heritage Sites), the Secretary of State will take as the starting point that the relevant tests in Sections 5.4 and 5.10 of EN-1 have been met, and any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by the urgent need for this type of infrastructure.</p>	<p>This paragraph of EN-3 is not applicable as the offshore elements of the Project are not located within a nationally recognised designation. The potential for the Project to impact upon the nationally designated areas has been considered in Section 17.7. Regard has been paid to the purpose and special qualities of these nationally designated landscapes.</p>
	<p>2.8.64 Owing to the complex nature of offshore windfarm development, many of the details of a proposed scheme may be unknown to the applicant at the time of the application to the Secretary of State. Such aspects may include:</p> <ul style="list-style-type: none"> • the precise location and configuration of turbines and associated development. • the foundation type and size. • the installation technique or hammer energy. • the exact turbine blade tip height and rotor swept area. • the cable type and precise cable or offshore transmission route. • the exact locations of offshore and/or onshore substations. 	<p>The need for a level of flexibility within the Project design envelope is well established and described in Chapter 3 (Document Referencedocument reference 6.1.3). The key parameters for assessment that have been used to inform the assessment of the maximum adverse case for the purpose of SLVIA are set out in Section 17.5. The design principles for the ORCP are considered in ORCP Design Principles Statement (document reference 21.16). In addition, measures relevant to lighting are described in the Outline ORCP Lighting Management Plan, document reference 8.23.</p>

Legislation/policy	Key provisions	Section where comment addressed
	2.8.65 Guidance on how applicants should manage flexibility is set out at section 2.6 of this NPS and 4.3 of EN-1.	
	2.8.194 Applicants should address impact on seascape in addition to the landscape and visual effects discussed in Section 5.10 of EN-1.	The potential effects on seascape are addressed in Section 17.7.
	2.8.195 Seascape is an additional issue for consideration given that it is an important environmental, cultural and economic asset. This is especially so where seascape provides the setting for a nationally designated landscape (National Park, The Broads or AONB) and as a defined special quality of the area supports the delivery of the designated area's statutory purpose. This is also an important consideration for stretches of coastline identified as Heritage Coasts, which are associated with a largely undeveloped coastal character.	
	2.8.196 Seascape is a discrete area, with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.	
	2.8.197 Applicants should follow relevant guidance including, but not limited to seascape and landscape character assessments, landscape sensitivity assessments, and marine plan seascape	Relevant seascape character assessments have been referenced as set out in Section 17.4.

Legislation/policy	Key provisions	Section where comment addressed
	character assessments (e.g., Natural Resource Wales (NRW) Marine Character Areas (with associated guidance) England's marine plans).	
	2.8.198 Where a proposed offshore windfarm will be visible from the shore and would be within the setting of a nationally designated landscape with potential effects on the area's statutory purpose, a seascape, landscape and visual impact assessment (SLVIA) should be undertaken in accordance with the relevant offshore windfarm EIA policy and the latest Offshore Energy SEA, including the White 2020 report. The SLVIA should be proportionate to the scale of the potential impacts. This will always be the case where a coastal National Park, the Broads or AONB, or a Heritage Coast or their setting is potentially affected.	It is considered that the SLVIA is proportionate to the scale of the potential impacts and the assessment in Section 17.7 includes the effects on the settings of nationally designated landscapes. The SLVIA scope has been informed through consultation with stakeholders during statutory, non-statutory and Evidence Plan processes, which are influencing the SLVIA in all aspects, from consideration of the maximum design scenarios, the number and location of viewpoints, the approach taken to assessment at each location, and detail presented in contextualising key assessment criteria such as magnitude and susceptibility. The SLVIA is therefore directly proportionate both to the scale of potential impacts and the quantum of feedback provided.
	2.8.199 Where necessary, assessment of the seascape should include an assessment of four principal considerations on the likely effect of offshore windfarms on the coast:	The range and frequency of visibility of Project from the coast is illustrated in Figure Figures 17.13a and 17.13b of Volume 2, (document reference (6.2.17.13), and considered in the

Legislation/policy	Key provisions	Section where comment addressed
	<ul style="list-style-type: none"> the limit of visual perception from the coast under poor, good and best lightening conditions; the effects of navigation and hazard prevention lighting on dark night skies; individual landscape and visual characteristics of the coast and the special qualities of designated landscapes, such as World Heritage Sites and National Parks, which limits the coasts capacity to absorb a development; and how people perceive and interact with the coast and natural seascape. 	<p>visual baseline in Section 17.4 and throughout the assessment in Section 17.7.</p> <p>Night-time effects of lighting within the array area have been scoped out of the SLVIA, based on the Scoping Opinion. Night time effects associated with the ORCPs are considered in Section 17.7. (see also Outline ORCP Lighting Management Plan 8.23).</p> <p>The characteristics and special qualities of the coast in relation to designated landscapes is assessed in Section 17.7.</p> <p>How people perceive and interact with the coast and seascape is considered in Sections 17.4 and 17.7.</p>
	2.8.200 As part of the SLVIA, photomontages will be required. Viewpoints to be used for the SLVIA should be selected in consultation with the statutory consultees at the EIA Scoping stage.	Viewpoints have been agreed in consultation with statutory consultees as described in Section 17.7. A combination of wireline visualisations, photomontages and viewpoint photography have been prepared are included in Figures 17.25 to 17.36 of Volume 2 2 (document references 6.2.17.25 to 6.2.17.36).
	2.8.201 Applicants should assess the magnitude and significance of change to both the identified seascape receptors (such as seascape and landscape units, visual	The methodology for the assessment of magnitude of change to seascape receptors is summarised in Section 17.6.

Legislation/policy	Key provisions	Section where comment addressed
	receptors and the special qualities of designated landscapes) in accordance with the standard methodology for SLVIA.	
	2.8.202 Where appropriate, cumulative SLVIA should be undertaken in accordance with the policy on cumulative assessment outlined in Section 5.10.17 of EN-1.	Cumulative SLVIA is undertaken within Section 17.8 of this chapter.
	2.8.253 Neither the design nor scale of individual wind turbines can be changed without significantly affecting the electricity generating output of the wind turbines. Therefore, the Secretary of State should expect it to be unlikely that mitigation in the form of reduction in scale will be feasible.	The design of the Project is explained in Chapter 3 (Document Reference document reference 6.1.3) and Chapter 4 (Document Reference document reference 6.1.4) of the ES.
	2.8.254 However, the siting layout of the turbines should be designed appropriately to minimise harm, considering other constraints such as ecological effects, safety reasons or engineering and design parameters.	
	2.8.341 Where a proposed offshore windfarm is within sight of the coast, there may be adverse effects. The Secretary of State should not refuse to grant consent for a development solely on the ground of an adverse effect on the seascape or visual amenity unless: <ul style="list-style-type: none"> they considers that an alternative layout within the identified site could be reasonably proposed which would minimise any harm, taking into account other constraints that the applicant has faced such as 	The design of the Project is explained in Chapter 3 (Document Reference document reference 6.1.3) and Chapter 4 (Document Reference document reference 6.1.4) of the ES.

Legislation/policy	Key provisions	Section where comment addressed
	<p>ecological effects, while maintaining safety or economic viability of the application; or</p> <ul style="list-style-type: none"> they take account of the sensitivity of the receptor(s) and impacts on the statutory purposes of designated landscapes as set out in Section 5.10 of EN-1; and decide that the harmful effects are considered to outweigh the benefits of the proposed scheme. See also Critical National Priority (Section 2.8.83 of EN3) 	
Design Principles for National Infrastructure, National Infrastructure Commission Design Group	<p>NPS EN-1 notes that <i>“Design principles should take into account any national guidance on infrastructure design, this could include for example the Design Principles for National Infrastructure (National Infrastructure Commission)”</i>. This guidance sets out four broad design principles, as follows:</p> <p><i>“Climate - mitigate greenhouse gas emissions and adapt to climate change.</i></p> <p><i>People - reflect what society wants and share benefits widely.</i></p> <p><i>Places - provide a sense of identity and improve our environment.</i></p> <p><i>Value - achieve multiple benefits and solve problems well”.</i></p>	<p>Chapter 3 (Document—Referencedocument reference 6.1.3) and Chapter 4 (Document—Referencedocument reference 6.1.4) and Volume 1, Chapter 31: Climate Change (Document—Referencedocument reference 6.1.31) set out how the Project addresses climate change, benefits to society and solves multiple design/environmental factors to secure environmental and socio-economic benefits.</p> <p>The design of the Project is explained in Chapter 3 (Document—Referencedocument reference 6.1.3) and Chapter 4 (Document—Referencedocument reference 6.1.4) of the ES. The design principles for the ORCP are set out in the ORCP Design Principles Statement (document reference 21.16).</p>

Legislation/policy	Key provisions	Section where comment addressed
East Riding Local Plan 2012 – 2029 Strategy Document (Adopted April 2016)	Policy EC5: Supporting the Energy Sector sets out criteria applicable to new energy related development. It identifies that new development should be acceptable in terms of [inter alia] cumulative effects with other developments, the character and sensitivity of landscapes to accommodate such development, with particular emphasis placed on identified Important Landscape Areas, and visual impacts. Relevant to the Project, Important Landscape Areas include the Heritage Coast at Spurn Head. Whilst this list of criteria is focused on energy development more generally than specifically wind energy (with windfarm references directed towards onshore developments), the principles have relevance to the Project.	The potential effects of the Project on landscape character are addressed in Section 17.7.
	Policy ENV1: Integrating High Quality Design set out criteria for the design of new development. Whilst this policy is focussed on proposals such as residential development, elements of Part A are applicable to the Project: <i>“1. Contribute to safeguarding and respecting the diverse character and appearance of the area through their design, layout, construction and use; and 2. Seek to reduce carbon emissions and make prudent and efficient use of natural resources, particularly land, energy and water”.</i>	Chapter 3 (Document Reference document reference 6.1.3), Chapter 31 (Document Reference document reference 6.1.31) and Chapter 2 (Document Reference document reference 6.1.2) set out how the Project addresses climate change, benefits to society and solves multiple design/environmental factors to secure environmental and socio-economic benefits. The design of the Project is explained in Chapter 3 (Document Reference document reference 6.1.3) and Chapter 4 (Document

Legislation/policy	Key provisions	Section where comment addressed
		Reference document reference 6.1.4) of the ES. The design principles for the ORCP are considered in ORCP Design Principles Statement (document reference 21.16).
	<p>Policy ENV2: Promoting a high quality landscape.</p> <p>This policy states that <i>“development proposals should be sensitively integrated into the existing landscape, demonstrate an understanding of the intrinsic qualities of the landscape setting and, where possible, seek to make the most of the opportunities to protect and enhance landscape characteristics and features.”</i></p> <p>The policy includes a number of criteria to achieve this, the most relevant to the Project being:</p> <p><i>“Protect and enhance views across valued landscape features, including flood meadows, chalk grassland, lowland heath, mudflats and salt marsh, sand dunes and chalk cliffs; and Protect and enhance the undeveloped coast.”</i></p> <p>The policy goes on to state that <i>“proposals should protect and enhance existing landscape character as described in the East Riding Landscape Character Assessment”</i>. It places an emphasis on the Important Landscape Areas as shown on the Policies Map, which include the Heritage Coast designation Spurn Head.</p>	The potential effects of the Project on landscape character are addressed in Section 17.7.

Legislation/policy	Key provisions	Section where comment addressed
East Riding Local Plan Update 2020 – 2039 Draft Strategy Document Update	The Local Plan Update includes 21 objectives, the most relevant to the SLVIA being number 17: <i>“Recognise, protect and enhance the international, national and local importance of the East Riding’s natural environment and biodiversity, including nature designations of all levels, Priority Habitats and Species, high quality landscapes, such as the Yorkshire Wolds, networks of green infrastructure and supporting opportunities for appropriate recreation”.</i>	The potential effects of the Project on landscape character are addressed in Section 17.7.
	Policies EC5: Supporting the Renewable and Low Carbon Energy Sector, ENV1: integrating High Quality Design and ENV2: Promoting a High Quality Landscape all contain detail and principles that are similar to the corresponding policies in the Adopted Local Plan Strategy Document, as detailed above.	The potential effects of the Project on landscape character are addressed in Section 17.7.
East Lindsey Local Plan, Core Strategy, Adopted 2018	The Vision and Objectives for East Lindsey includes [inter alia] reference to <i>“a high quality environment that makes the most of its special qualities, particularly the coast, the Lincolnshire Wolds and the historic market towns”.</i>	The potential effects of the Project on landscape character are addressed in Sections 17.7.
	Strategic Policy 23 (SP23) – Landscape sets out provision for the protection, enhancement, use and management of the landscape within the East Lindsey District. It identifies that development will be guided by East Lindsey District’s Landscape Character Assessment and places an emphasis on landscapes that are considered to be highly sensitive.	The potential effects of the Project on landscape character are addressed in Section 17.7. The Lincolnshire Wolds AONB is a statutorily protected landscape, recognised by Government to be of the highest value. The offshore elements of the Project will be visible

Legislation/policy	Key provisions	Section where comment addressed
		within the setting of the Lincolnshire Wolds AONB and may influence its distinctive character. The likely impacts of the Project on the perceived landscape and seascape character, and special qualities of the Lincolnshire Wolds, are addressed in Section 17.7.
	Strategic Policy 27 (SP27) Renewable and Low Carbon Energy establishes support for large scale renewable and low carbon energy development, providing the individual or cumulative impacts of such development are considered acceptable (weighted against the benefits) in relation to [inter alia] <i>“the surrounding landscape, townscape and historic landscape character, and visual qualities”</i> .	The potential effects of the Project on landscape character are addressed in Section 17.7.
North Norfolk Local Development Framework, Core Strategy, Adopted September 2008	Core Aim 3 defines the need to <i>“protect the built and natural environment and local distinctive identity of North Norfolk, and enable people's enjoyment of this resource”</i> .	The potential effects of the Project on landscape character are addressed in Section 17.7.
	Policy SS 4 Environment sets out that <i>“renewable energy proposals will be supported where impacts on amenity, wildlife and landscape are acceptable”</i> .	The potential effects of the Project on landscape character are addressed in Section 17.7.
	Policy EN 1 Norfolk Coast Area of Outstanding Natural Beauty and The Broads set out that the individual and cumulative effects of the development proposals will be carefully	The Norfolk Coast AONB is a statutorily protected landscape, recognised by Government to be of the highest value. The offshore elements of the Project will be visible

Legislation/policy	Key provisions	Section where comment addressed
	assessed. It places a clear emphasis on protecting the AONB and its special qualities.	within the setting of the Norfolk Coast AONB and may influence its distinctive character. The likely impacts of the Project on the perceived landscape and seascape character, and special qualities of the Norfolk Coast, are addressed in Section 17.7.
	Policy EN 2 Protection and Enhancement of Landscape and Settlement Character provides broader protection of the landscape, identifying the need to take account of the North Norfolk Landscape Character Assessment.	The potential effects of the Project on landscape character are addressed in Section 17.7.
	Policy EN 4 Design sets out a number of criteria associated with the design of the Project. Whilst this policy is focussed on terrestrial development, the overarching principles relating to local distinctiveness and the protection of the character and quality of an area are broadly applicable.	The potential effects of the Project on landscape character are addressed in Section 17.7
	Policy EN 7 Renewable Energy includes points that are specific to potential landscape and visual effects. It also sets out that large scale renewable energy proposals would not be permitted in areas of national importance, unless it can be demonstrated that that objectives of the designation are not compromised.	The potential effects of the Project on landscape character are addressed in Section 17.7.
North Norfolk Local Plan 2016 – 2036 Proposed Submission Version	Objective 2 Protecting Character includes reference to the protection, conservation and enhancement of the natural environment. It also sets out the need to protect, enhance and	The potential effects of the Project on landscape character are addressed in Section 17.7

Legislation/policy	Key provisions	Section where comment addressed
(Regulation 19 Publication) Local Plan, January 2022	maintain the unique qualities and character of the North Norfolk District.	
	Policy CC 1 Delivering Climate Resilient Sustainable Growth sets out broad criteria for sustainable development with part 1, point h specifically relating to the conservation and enhancement of landscape character.	The potential effects of the Project on landscape character are addressed in Section 17.7.
	Policy CC 2 Renewable and Low Carbon Energy is specific to the terrestrial elements of renewable energy development, including the landward infrastructure for offshore developments. The criteria set out in this policy include consideration of the potential landscape and visual effects of such developments.	The potential effects of the Project on landscape character are addressed in Section 17.7.
	Policies ENV 1 Norfolk Coast Area of Outstanding Natural Beauty and The Broads, ENV 2 Protection and Enhancement of Landscape and Settlement Character and ENV 3 Heritage & Undeveloped Coast largely reflect the corresponding policies in the Adopted Local Plan ¹ , placing an emphasis on the protection, conservation and enhancement of the landscape. The policies include references to the qualities and	The Norfolk Coast AONB is a statutorily protected landscape, recognised by Government to be of the highest value. The offshore elements of the Project will be visible within the setting of the Norfolk Coast AONB and may influence its distinctive character. The likely impacts of the Project on the perceived landscape and seascape character, and special

¹ A Local Plan is a document that sets out how development can best benefit the area the council is responsible for. The Local Plan comprises one or more documents prepared in accordance with legal requirements, independently examined and adopted by the Council.

Legislation/policy	Key provisions	Section where comment addressed
	characteristics of the landscape and the published landscape character assessment.	qualities of the Norfolk Coast AONB, are addressed in Section 17.7.

17.3 Consultation

8. Consultation is a key part of the Development Consent Order (DCO) application process. Consultation regarding seascape, landscape and visual effects has been conducted through the Evidence Plan Process (EPP), Expert Technical Group (ETG) meetings, the EIA Scoping Process (Outer Dowsing Offshore Wind, 2022), and the section 42 consultations carried out on the Preliminary Environmental Information Report (PEIR) (Outer Dowsing Offshore Wind, 2023a) and the Autumn Environmental Update Report (Outer Dowsing Offshore Wind, 2023b). An overview of the Project consultation process is presented within Volume 1, Chapter 6: Technical Consultation Report (document reference 6.1.6).
9. A summary of the key issues raised during consultation to date, specific to seascape, landscape and visual effects, is outlined in Table 17.2 below, together with how these issues have been considered in the production of this SLVIA.

Table 17.2 Summary of consultation relating to seascape, landscape and visual effects

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
Scoping Opinion ² Comments		
Scoping Opinion (the Planning Inspectorate, 9 September 2022)	<p>The Planning Inspectorate does not agree to scope out seascape, landscape and visual effects as a result of the array area. It is considered that seascape, landscape and visual effects associated with the array are possible, as the array area is located 54km away from the coastline and within the 60km study area and the Zone of Theoretical Visibility (ZTV) presented in Figure 7.11.2</p> <p>The ES should provide an assessment of seascape, landscape and visual effects within the 60km study area during all phases of the Project, where significant effects are likely to occur.</p>	The potential effects of the Project on seascape, landscape and visual receptors are presented in Section 17.7
Scoping Opinion (the Planning Inspectorate, 9 September 2022)	The Scoping Report states that the ZTV and visibility data based on atmospheric conditions, show that the views of the Proposed Development will become restricted, dispersed and infrequent at distances beyond 60km. The Planning Inspectorate is content that at distances greater	A study area of 60km from the project array area has been applied for assessing seascape, landscape and visual effects as part of the EIA process. Effects on seascape, landscape and

² The Scoping Opinion was published by the Planning Inspectorate, September 2022 and can be found in Appendix 2 of the Consultation Report (document reference 5.1.2)

Date and phase/type	consultation	Consultation and key issues raised	Section where comment addressed
		than 60km significant effects are unlikely and agrees that this matter can be scoped out.	visual receptors beyond 60km of the array area are not considered.
Scoping Opinion (the Planning Inspectorate, 9 September 2022)		The Scoping Report seeks to scope this matter out on the grounds that LCTs inland from the coast are located outside the main visual envelope of the sea and the Project, so are unlikely to be affected by changes occurring out to sea. In the absence of evidence demonstrating clear agreement with relevant consultation bodies, the Planning Inspectorate is not in a position to agree to scope out this matter from the assessment. Accordingly, the ES should include an assessment of these matters or evidence demonstrating agreement with the relevant consultation bodies and the absence of a likely significant effect.	The potential effects of the Project on landscape character are addressed in Section 17.7.
Scoping Opinion (the Planning Inspectorate, 9 September 2022)		The Scoping Report proposes to scope this matter out on the basis that the array area is located at considerable distance offshore and will only result in indirect impacts on the perception of landscape character and qualities. Considering the location of the array area, the Planning	Matter scoped out by the Planning Inspectorate.

Date and phase/type	consultation	Consultation and key issues raised	Section where comment addressed
		Inspectorate agrees that this impact can be scoped out of the assessment as significant effects are unlikely to occur.	
Scoping Opinion (the Planning Inspectorate, 9 September 2022)		The Scoping Report seeks to scope this matter out as the likely impacts would be temporary in nature and relate to the presence of a small number of vessels out at sea. The Planning Inspectorate agree this matter can be scoped out as significant effects are unlikely to occur.	Matter scoped out by the Planning Inspectorate.
Scoping Opinion (the Planning Inspectorate, 9 September 2022)		The Inspectorate agrees that this matter can be scoped out of the ES as the lighting during construction and decommissioning will be temporary in nature and largely located behind existing OWFs. Therefore, making it unlikely to result in significant effects to seascape, landscape and visual receptors during the construction and decommissioning of the Proposed Development.	Matter scoped out by the Planning Inspectorate. A concise assessment of potential construction effects is included in in Section 17.7.
Scoping Opinion (the Planning Inspectorate, 9 September 2022)		The Scoping Report seeks to scope out this matter on the basis that aviation navigation lights would only be visible from the coastline in excellent visibility conditions, marine navigation lighting has limited range and the distance of visibility would be restricted by the screening effect of the horizon that occurs due to the Earth's curvature. The	Matter scoped out by the Planning Inspectorate. Consideration of the aviation and navigation lighting required for the ORCPs is included in in Section 17.7.

Date and phase/type	consultation	Consultation and key issues raised	Section where comment addressed
		Planning Inspectorate agrees that this impact can be scoped out of the assessment as significant effects are unlikely to occur.	
Scoping Opinion (the Planning Inspectorate, 9 September 2022)		The Scoping Report notes that there could be a variety of offshore visual receptors such as recreational sea users, people working in oil and gas industry and commercial users, although limited information is currently provided with regards to recreational users in particular. The Planning Inspectorate does not agree to scope out the impact of the array area on views experienced by offshore visual receptors due to insufficient evidence at this stage. The ES should provide an assessment of the visual effects on offshore receptors during all phases of the Project, where significant effects are likely to occur.	The potential effects of the Project on visual receptors are addressed in Section 17.7.
Scoping Opinion (the Planning Inspectorate, 9 September 2022)		The ES should provide an assessment of the potential cumulative effects of the offshore Reactive Compensation Station (RCS) [ORCPs] for all phases of the Project, where likely significant effects could occur.	The potential effects of the Project on visual receptors are addressed in Section 17.7.

Date and phase/type	consultation	Consultation and key issues raised	Section where comment addressed
Scoping Opinion (the Planning Inspectorate, 9 September 2022)		Proposals for the creation of a Heritage Coast north of Mablethorpe that may overlap with the onshore Scoping Boundary for the cable landfall and grid connection. Following further liaison with NE regarding this potential new Heritage Coast, the ES should assess impacts to this receptor, where significant effects are likely to occur.	This area of Heritage Coast has not yet been designated and no information is currently available on the possible proposals to designate it. Therefore, it is not possible to assess potential effects on the possible area of Heritage Coast. This is discussed further below, in relation to the letter received from Natural England date 17 May 2023.
Scoping Opinion (the Planning Inspectorate, 9 September 2022)		The ES should include a ZTV for the RCS [ORCPs] and, with reference to the ZTV, provide justification that the proposed 30km radius study area is sufficient to identify any likely significant effects. The ES should assess likely significant effects arising from the RCS [ORCPs] on the Heritage Coast and onshore AONB, including the Lincolnshire Wolds AONB. The approach to the assessment should be discussed with relevant consultation bodies and stakeholders, such as the Lincolnshire Wolds Countryside Service (Lincolnshire Wolds AONB Partnership).	A ZTV has been prepared for the ORCPs and this is included in Figures 17.14, 17.15 and 17.16 of Volume 2, (document references 6.2.17.14 ; 6.2.17.15; 6.2.17.16) → <u>→</u> . The potential effects of the ORCPs on seascape, landscape and visual receptors are addressed in Section 17.7.

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
Scoping Opinion (the Planning Inspectorate, 9 September 2022)	The viewpoint list within Table 17.11 does not include any views from offshore receptors, for example from vessel routes located within the study area. The Applicant should make effort to agree representative visualisations of points from offshore receptors with the relevant stakeholders and consultation bodies.	Additional Viewpoints along the Lincolnshire and Norfolk Coast have been selected in response to the comments made by relevant stakeholders. A note explaining the viewpoint selection was provided to ETG members on 31/01/23. This rationale is also included in Section 17.4. Two viewpoints, represented by wireline visualisations, have been selected in relation to offshore receptors.
Seascape, Landscape and Visual Impact ETGs		
Seascape, Landscape and Visual Impact ETG (13 July 2022)	The application of a 60km study area was questioned, with a suggestion from Natural England that this may need to increase to 70-80km from the array area. However, this was resolved following the meeting, by confirming that the proposed 60km study area is consistent with approach being taken for other similar developments.	No comments to address.
	Next steps were identified as being to agree the study area and viewpoint selection.	It was confirmed that the study area is consistent with the approach being taken for other similar developments, as described for the point above.

Date and phase/type	consultation	Consultation and key issues raised	Section where comment addressed
			Viewpoint selection was discussed at the ETG meeting held on 12/12/2022 as described below.
Seascape, Landscape and Visual ETG (12 October 2022) Subsequent related letter from Natural England (06 April 2023)		Natural England comment that their <i>"only concern is for the setting of the proposed Lincolnshire HC, and potentially the seascape setting of Lincolnshire Wolds AONB. All other designated and defined landscapes can be excluded"</i> .	No information on the Proposed Heritage Coast is currently available. Natural England has confirmed that this will not be available prior to the application being submitted, therefore no assessment can be made in relation to this possible future Heritage Coast. Potential effects on the Lincolnshire Wolds AONB is considered in Section 17.7. Whilst stakeholder comments have been received from Natural England there has been very limited feedback from other stakeholders therefore the ES includes analysis of all designated and defined landscapes in the SLVIA study area in Sections 17.4 and 17.7.

Date and phase/type	consultation Consultation and key issues raised	Section where comment addressed
	<p><i>“Natural England is confident that the Heritage Coast proposed for Lincolnshire will be defined in 2023. It will therefore exist at the time of the construction and the operation of the proposed array. Heritage Coasts are not covered by policies in EN-1 but are covered by policies (at para. 176) in the National Planning Policy Framework (NPPF). If defined The Lincolnshire Heritage Coast will be located wholly outside of a designated landscape and therefore will not benefit from the policies in EN-1. However Natural England advises that Heritage Coasts located outside of designated landscapes should be a considered as having the highest sensitivity in an SLVIA or Landscape Visual Impact Assessment (LVIA) and that the setting of these areas is an important contributing factor in their special character. The design and location of the RCS [ORCPs] should, as far as it is operationally possible to do so, take account of this special character.”</i></p>	<p>No information on the Proposed Heritage Coast is currently available. This is covered in further detail in relation to the letter from Natural England dated 17 May 2023.</p> <p>The design principles for the ORCP are considered in ORCP Design Principles Statement (document reference 21.16).</p>
	<p><i>“Natural England confirms that we do not expect significant effects to occur on the Spurn Head Heritage Coast, North Norfolk Heritage Coast and Norfolk Coast AONB.</i></p>	<p>Potential effects on the Lincolnshire Wolds AONB is considered in Section 17.7.</p> <p>Whilst stakeholder comments have been received from Natural England there has been very limited feedback from other stakeholders therefore the ES includes</p>

Date and phase/type	consultation Consultation and key issues raised	Section where comment addressed
	<p><i>Nor do we expect significant effects to occur on the Lincolnshire Wolds AONB and the proposed Lincolnshire HC.</i></p> <p><i>Our only concern is with the likely effects of the RCS."</i></p> <p>It was questioned as to whether the ES need to provide an assessment of the visual effects on offshore receptors. Natural England responded <i>"this is matter for the applicant to decide. NE will only provide advice on those receptors associated with designated and defined landscapes. For other SLIVIA receptors we do not provide comment on receptors located within the seascape. We are aware that many SLVIA's include visual receptors groups such as recreational sailors and passengers on North Sea Ferries however it is for the applicant to decide whether or not to include these receptor groups in their assessment."</i></p>	<p>analysis of all designated and defined landscapes in the SLVIA study area in Sections 17.4 and 17.7.</p> <p>Offshore visual receptors have been considered in Section 17.7.</p>
Seascape, Landscape and Visual Impact ETG (12 December 2022) Subsequent related letter from Natural England (06 April 2023)	Gibraltar Point suggested as an additional viewpoint	A potential viewpoint at Gibraltar Point has been considered, but subsequently discounted due to the distance to the elements of the Project and the range of other viewpoints included in the SLVIA. The

Date and phase/type	consultation	Consultation and key issues raised	Section where comment addressed
			selection of viewpoints is explained in Section 17.4.
		Recommended that the EIA reports for other offshore development be reviewed in relation to viewpoint selection. The rationale behind viewpoint selection was requested.	Additional Viewpoints along the Lincolnshire and Norfolk Coast have been selected in response to the comments. A note explaining the viewpoint selection has been provided to ETG members. This rationale is also included in Section 17.4.
Seascape, Landscape Expert Topic Group (ETG) Meeting Minutes and Presentation Slide Pack (12.12.22), letter from Natural England (06 April 2023)		Natural England commented (letter dated 06 April 2023) that the <i>“Project Envelope is likely to reduce to 300km² at a future point during the submission. Natural England queried whether this reduces the 60km radius study area for the SLVIA agreed through the Planning Inspectorates Scoping Opinion?”</i>	The study area used for the SLVIA is 60km from the outer edge of the array area and 30km from the ORCP area and has been amended accordingly following revisions to the Project since PEIR.s.
		Natural England comment: <i>“Based on this future reduction of the envelope, we cannot comment on the appropriate study area radius for the RCS/ Offshore Platforms (OPs) [ORCPs], or any viewpoints that may be required, in the absence of information on:</i>	The minimum distance to the ORCPs is explained in Section 17.5. It is considered that the assessment findings presented in Section 17.7 provide justification for the 30km study area.

Date and phase/type	consultation Consultation and key issues raised	Section where comment addressed
	<p><i>a. the minimum distance from the coastline to the RCS [ORCPs];</i></p> <p><i>b. rationale for the proposed study radius of 30km for the RCS's [ORCPs];</i></p> <p><i>c. viewpoints the Applicant considers appropriate given the Worst Case Scenario of the RCS's [ORCPs] being 6km from shore."</i></p>	<p>The viewpoint selection is explained in Section 17.4 and the viewpoints are assessed in Section 17.7.</p>
	<p>Natural England agree with the statement that <i>"the most likely visibility will be from the RCS [ORCPs]"</i>.</p>	<p>Relates to the assessment findings in Section 17.7.</p>
	<p>Natural England <i>"welcome the acknowledgement that embedded mitigation for the seascape, landscape and visual effects of the RCS's [ORCPs] may be required"</i>.</p>	<p>Consideration of the need for mitigation is considered within the assessment presented in Section 17.7.</p>
<p>SLVIA Viewpoint Selection Technical Note</p> <p>Letter from Natural England (06 April 2023)</p>	<p>Natural England set out that <i>"the proposed offshore infrastructure within the project array area will not significantly interact with seascape, landscape and visual receptors associated with the special character of Spurn Head Heritage Coast and North Norfolk Heritage Coasts or the statutory purpose of the Norfolk Coast and Lincolnshire Wolds AONBs, (or any proposed Heritage Coast for the Lincolnshire coast). There is no additional information within the ODOW SLVIA Viewpoint Selection Note (23-</i></p>	<p>Whilst stakeholder comments have been received from Natural England there has been very limited feedback from other stakeholders therefore the ES includes analysis of all designated and defined landscapes in the SLVIA study area in Sections 17.4 and 17.7.</p>

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
	<i>ODO-CON-K-BE-000002-01) that requires us to amend this advice."</i>	
	<p><i>"Within Natural England's response to the Scoping Response, it was noted that "without further details on the location and height of the offshore RCS [ORCPs] Natural England cannot comment on its impact on the special character of the Heritage Coast, the appropriate study area radius, or any viewpoints that might be required.". Paragraph 1.2.3 confirms that the location of the RCS's [ORCPs] is between 6km and 17km from shore, and that the dimensions of the RCS's [ORCPs] will be up to 90m x 90m x 90m.</i></p> <p><i>A. While the new Worst Case Scenario for the RCS [ORCPs] infrastructure has been indicated, no minimum distance from the coastline to the RCS [ORCPs] has been confirmed.</i></p> <p><i>b. No rationale for the suggested 30km study radius for the RCS's [ORCPs] has been provided.</i></p> <p><i>c. We advise that viewpoints from designated landscapes—dependent upon the location of the RCS's [ORCPs] —will need to be included within the EIA based</i></p>	<p>The minimum distance to the ORCPs is explained in Section 17.5.</p> <p>It is considered that the assessment findings presented in Section 17.7 provide justification for the 30km study area.</p> <p>The viewpoint selection is explained in Section 17.4 and the viewpoints are assessed in Section 17.7. These viewpoints include an open elevated location from the eastern edge of the Lincolnshire Wolds AONB.</p>

Date and phase/type	consultation	Consultation and key issues raised	Section where comment addressed
		<p><i>upon this Worst Case Scenario, and a well justified study area.</i></p> <p><i>d. We welcome the reference to investigating potential views of the RCS's [ORCPs] from the Lincolnshire Wolds AONB, and remind the Applicant that there are proposals for the creation of a Heritage Coast north of Mablethorpe."</i></p>	
SLVIA ETG meeting notes, comments from Natural England (10 October 2022 ETG meeting) Email from Natural England (17 May 2023)		<p><i>"Natural England will not be providing any comments on seascape effects other than for the RCS [ORCPs]. This is because the offshore order limits for the array area is beyond the offshore setting of the Lincolnshire Wolds AONB and Norfolk Coast AONB."</i></p>	Whilst stakeholder comments have been received from Natural England there has been very limited feedback from other stakeholders therefore the ES includes analysis of all designated and defined landscapes in the SLVIA study area in Sections 17.4 and 17.7.
		<p>Natural England comment: <i>"At over 54km from the nearest designated landscape the array itself will not lead to significant effects on designated landscapes or defined coasts. Natural England expect the PEIR to consider the effects of the RCS's [ORCPs] (in terms of a defined Worst Case Scenario) on the Lincolnshire Wolds AONB."</i></p>	Whilst stakeholder comments have been received from Natural England there has been very limited feedback from other stakeholders therefore the ES includes analysis of all designated and defined landscapes in the SLVIA study area in Sections 17.4 and 17.7.

Date and phase/type	consultation Consultation and key issues raised	Section where comment addressed
	<p><i>“Natural England and the local planning authority have ambitions for a Lincolnshire Heritage Coast, however planning for this is still at a very early stage so we cannot provide any certainty about the geographical extent of a finally defined Heritage Coast or about the specific special characteristics that it would seek to protect and how it would be served by local planning policies. Whilst a fully defined Heritage Coast is supported by planning policy in paragraph 178 of the National Planning Policy Framework, a speculative Heritage Coast confers no additional planning protection. We would however request that you give appropriate consideration to a prospective Heritage Coast in progressing your plans and assessing their landscape and seascape effects. If more definitive information about the Heritage Coast emerges in time to further inform your plans, we will of course share that with you.”</i></p>	<p>The ambition for a Lincolnshire Heritage Coast is acknowledged. Natural England has confirmed that this will not be available prior to the application being submitted, therefore no assessment can be made in relation to this possible future Heritage Coast, and no weight should be given to it in the assessment.</p>
<p>SLVIA ETG meeting notes, comments from Natural England (27 March 2023 ETG meeting) Email from Natural England (17 May 2023)</p>	<p>Natural England comment: <i>“A Worst case scenario (WCS) is likely to be objected to immediately upon submission, therefore it is recommended that the applicant seeks to move these structures to present as minimal impact as possible to facilitate a starting point for discussion.</i></p>	<p>The minimum distance to the ORCPs is explained in Section 17.5. In response to comments made by stakeholders at this ETG meeting the ORCP area has been reduced to increase the separation distance between these structures</p>

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
	<i>It's also likely that this will be as far offshore as possible but our recommendation is that the aim is to reduce impact rather than arbitrarily moving the structures as far offshore as possible."</i>	and the coastline. At the point in time when this comment was made the ORCPs were positioned a minimum of 6km from the coastline. The shortest separation distance between the ORCPs and the coastline is now 12km.
SLVIA ETG meeting notes, comments from Natural England (22 September 2023 ETG meeting) Email from Natural England (06 November 2023)	<p>Natural England responses to the questions posed during the meeting:</p> <p>Does the location of ORCPs further offshore (at least 12km) address Natural England's original concerns about their effects?</p> <p><i>"At S42 PEIR consultation, Natural England established that the ORCPs would not have any significant visual effects given their heights and the proposed 7km distance from shore, we would also be satisfied with the proposed "at least 12km" distance."</i></p> <p>Is it agreed that the focus of the ES should be on likely effects of ORCPs on coast between Chapel Six Marshes, Mablethorpe and Saltfleet?</p> <p><i>"This area is not currently within a designated landscape. The area would form part of the proposed Heritage Coast</i></p>	<p>The ORCPs are assessed in Section 17.7.</p> <p>The Lincolnshire Coronation Coast National Nature Reserve (LCCNNR) is an ecological designation and has limited influence on the SLVIA.</p>

Date and phase/type	consultation	Consultation and key issues raised	Section where comment addressed
		<i>in Lincolnshire. However our position on the proposed Lincolnshire Heritage Coast remains unchanged from that provided in our email dated 17th May 2023.”</i>	
Examining Authority, Section 51 advice to the Applicant (16 April 2024)		Some plans included in this chapter would benefit from additional labelling and the provision of insets to provide greater clarity in areas with several layers of information, e.g., Figure 17.10 – please can insets be provided to provide greater clarity of the LCA boundaries (particularly the North Norfolk LCAs) and the extent of the ZTV within them.	An updated version of Figure 17.10 has been prepared. To provide additional detail and clarity the information contained within Figure 17.10 is now covered by Figure 17.10a and Figure 17.10b.
Examining Authority Questions, ExQ1 (06 November 2024)		Please provide an update to Figure 17.11 that identifies the location of Sheringham Hall Registered Park and Garden. Provide a figure showing the visibility range of the ORCPs and accompanying met office data (Similar to Figure 17.13 and Table 17.7).	Figure 17.11 has been updated to show the location of Sheringham Hall Registered Park and Garden more clearly and the revised version is included with the same figure number. A figure showing the visibility range bands has been prepared and is included as Figure 17.13b.

10. As identified in Chapter 3 (~~Document Reference~~[document reference](#) 6.1.3) and Chapter 4 (~~Document Reference~~[document reference](#) 6.1.4), the Project design envelope has been refined as the Project has progressed, including as a result of stakeholder feedback from the Section 42 responses.
11. As referenced in Table 17.2 above, comments have been received from Natural England in April 2023. This sets out that Natural England agree that potential effects resulting from elements of the Project in the array area are likely to result in limited effects on landscape and visual receptors, including the designated/defined landscape at Spurn Head and the Norfolk Coast AONB. Natural England has also identified that they consider the key issues are likely to be associated with the ORCPs.
12. ETG meetings in August and September 2023 have taken place and no specific issues have been raised in relation to the elements of the Project in the array area. No Section 42 comments have been made in relation to the scope of the assessment presented in the Preliminary Environmental Information Report (PEIR) or the judgements that were made. However, the Project design envelope for the ES has changed compared with the approach taken for the preparation of PEIR, with alterations to the number of turbines would be constructed as part of the Maximum Design Scenario for the purpose of the SLVIA. In addition, there has been no agreement to scope out potential effects that would result from the Project array area. Therefore, the SLVIA provides an analysis of potential effects of all offshore elements of the Project. The approach to the assessment of Project elements within the array area is concise, which is consistent with the approach taken in relation to the PEIR and based on the limited feedback from consultees.

13. Design amendments to offshore export cable routing and export cable landfall are of relevance to this chapter. This ~~particularly~~ relates to the positioning of the two ORCPs, each of which could comprise an offshore platform and refinements to the offshore Export Cable Corridor (ECC). The design parameters for the ORCPs have evolved following the submission of the application documents for the Project. Previously the ORCPs were expected to have maximum parameters of up to 90m long x 90m wide x 90m high. ~~This~~ for the main elements of the structures. However, the maximum parameters for the main elements of the ORCPs are now 90m long x 90m wide x 59.2m high. These would be positioned within the offshore ~~Export Cable Corridor (ECC).~~ECC. In response to stakeholder comments the distance between the coastline and ORCPs area has been increased, moving this further offshore. The ORCPs would therefore be located between approximately 12km and ~~17km~~14km from the coastline. For the purpose of the SLVIA it is currently assumed this would be approximately 12km from the coastline as a potential worst case. A 30km study area around the ORCPs has been applied in the SLVIA. The revisions to the ECC mean that the northern ORCP area no longer forms part of The Project. The northern ORCP area was assumed to comprise a worst case scenario for the SLVIA as this positioned the structures in a location that is more remote from baseline operational wind farms. The removal of the northern ORCP area means that the ORCPs would be located further south within the ORCP area shown in Figure 17.1 (document reference 6.2.17.1). Two ORCPs still form part of The Project and the separation distance from the coastline remains approximately 12km. The design principles for the ORCP are considered in ORCP Design Principles Statement (document reference 21.16)

17.4 Baseline Environment

17.4.1 Study Area

14. An initial understanding of the baseline visual resource is provided in the East Inshore and East Offshore Seascape Character Assessment (Marine Management Organisation (MMO), 2012), which highlights the differences in views from Holderness where the *“flat topography results in the views of the seascape from land being generally restricted to coastal towns and immediate cliff edges”*; compared to the *“extensive linear coastal geometry”* of the East Lincolnshire and North Norfolk coasts *“creating long sweeping views along the coastline and out to sea”*. There are expansive views from the coast across undeveloped North Sea horizons, frequently marked by cargo ships, tankers and fishing vessels, which are *“animated by shipping traffic”* and *“influenced in places by concentrated urban settlements, commercial activities and both on and OWF developments”* (MMO, 2012).
15. The Project array area is located to the east of the Triton Knoll OWF, and to the north of the operational Dudgeon, Sheringham Shoal and Race Bank OWFs. Westermest Rough and Humber Gateway OWF are also visible off the coast of East Riding of Yorkshire; and Triton Knoll and the Inner Dowsing & Lynn and Lincs OWF cluster are viewed off the Lincolnshire coast. The operational Dudgeon, Sheringham Shoal and Race Bank OWFs are also viewed offshore from the Lincolnshire and North Norfolk coasts in coastal views. The locations and extents of these OWFs are included in Figure 17.2 of Volume 2, (document reference 6.17.2.2). The Project array area located behind these existing OWF groups in views offshore from the coastline. The SLVIA study area for the array area extends to 60km from its outer edge, as agreed in the Scoping Opinion (see Figure 17.1 of Volume 2, (document reference 6.2.17.1)).
16. The offshore ECC extends to the southwest of the array boundary, up to and including the intertidal zone at Wolla Bank, ending at MHWS for offshore elements of the Project, to the north of Chapel St Leonards on the Lincolnshire coastline. As noted above, two offshore ORCPs would be positioned within the offshore ECC and for the purpose of the SLVIA it is assumed this would be approximately 12km from the coastline as a potential worst case.
17. In addition to the 60km study area for the array area a 30km study area is applied around the ORCPs (see Figure 17.1 of Volume 2, (document reference 6.2.17.1)). Consultee comments have highlighted the need for the 30km study area surrounding the ORCPs to be justified. This justification forms one of the findings of the assessment and is set out in Section 17.7. The assessment judgements included in this chapter identify that significant effects are unlikely to occur as a result of the ORCPs towards the edges of, or beyond this 30km study area. Therefore, it is considered that this study area extent is appropriate and proportionate.

18. Two ANS are proposed, which would be located within the northern and southern ANS areas. The potential ANS locations are within the 60km study area for the Project array area. ZTVs have also been prepared for the ANSs (see Figure 17.20 of Volume 2, (document reference 6.2.17.20)). These ZTVs show the main areas of theoretical visibility associated with the ANSs are within the 60km radius study area from the Project array area. The ZTVs for the ANSs (Figure 17.20 of Volume 2, (document reference 6.2.17.20)) show limited and fragmented theoretical visibility associated with these proposed structures in relation to terrestrial parts of the SLVIA study area.

17.4.2 Data Sources

19. The data sources that have been collected and used to inform this SLVIA are summarised in Table 17.3 below.

Table 17.3 Data sources being used to inform the SLVIA

Source	Date	Summary	Coverage of study area
Anatec	2022/2023	Vessel traffic data	Shipping and navigation study area
Campaign to Protect Rural England (CPRE)	2016	Interactive maps of the UK's light pollution and dark skies as part of a national mapping project (LUC/CPRE, 2016). Open Source data used to understand and illustrate baseline lighting levels. (available online: [REDACTED])	Full coverage of the study area
East Lindsey District Council	2009	East Lindsey District Landscape Character Assessment (available online: https://www.e-lindsey.gov.uk/article/6163/Landscape-Character-Assessment)	East Lindsey
East Riding of Yorkshire Council	2016	East Riding of Yorkshire Landscape Character Assessment (available online: https://www.eastriding.gov.uk/planning-permission-and-building-control/planning-policy-and-the-local-plan/landscape-character-assessment/)	East Riding of Yorkshire
English Heritage	2020	Any specific visitor attractions/tourist destinations (available online: [REDACTED])	Full coverage of the study area

Source	Date	Summary	Coverage of study area
Google Earth Pro	2020	Aerial photography	Full coverage of the study area
Historic England	2020	Registered Parks and Gardens and UNESCO World Heritage Sites (available online: [REDACTED])	Full coverage of the study area
Long Distance Walkers Association	2020	Overview map for Long Distance Paths and Walks (available online: [REDACTED])	Full coverage of the study area
Met Office	2009-2019	Visibility Data. Visibility bands every 1km up to 30km, then every 5km up to 50km, then every 10km up to 70km, and >70km	Weather station at Thorney Island
MMO	2012	Seascape character area assessment East Inshore and East Offshore marine plan areas (available online: https://www.gov.uk/government/publications/east-marine-plan-areas-seascape-character-assessment)	South Inshore and Offshore Marine Plan Areas
North Norfolk District Council	2021	North Norfolk Landscape Character Assessment (available online: https://www.north-norfolk.gov.uk/media/6416/10274-north-norfolk-lca-final.pdf)	North Norfolk
National Trust	2020	Any specific visitor attractions/tourist destinations (available online: [REDACTED])	Full coverage of the study area
Natural England	2018	National Character Areas (NCAs) (available online: https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles#ncas-in-south-east-england-and-london)	Full coverage of the study area
Natural England	2019	GIS datasets for: National Parks (https://data.gov.uk/dataset/334e1b27-e193-4ef5-b14e-696b58bb7e95/national-parks-england).	Full coverage of the study area

Source	Date	Summary	Coverage of study area
		<p>AONBs (https://data.gov.uk/dataset/8e3ae3b9-a827-47f1-b025-f08527a4e84e/areas-of-outstanding-natural-beauty-england)</p> <p>Country Parks (https://data.gov.uk/dataset/e729abb9-aa6c-42c5-baec-b6673e2b3a62/country-parks-england).</p> <p>Open Access Land (https://data.gov.uk/dataset/05fa192a-06ba-4b2b-b98c-5b6bec5ff638/crow-act-2000-access-layer).</p> <p>Heritage Coasts (https://data.gov.uk/dataset/79b3515f-b00e-419a-9c7e-1d3163555886/heritage-coasts)</p>	
OPEN internal dataset	2020	Public Rights of Way	Full coverage of the study area
Ordnance Survey	2019	1:50,000 scale mapping	Full coverage of the study area
Ordnance Survey	2019	1:25,000 scale mapping	Coverage of coastal sections of the study area
Ordnance Survey Open Data	2019	OS County Region, Local Unitary Authority, Railways, Road and Settlements	Full coverage of the study area
Ordnance Survey	2019	OS Terrain 50 Digital Terrain Model (DTM)	Full coverage of the study area
Ordnance Survey	2019	OS Terrain 5 Digital Terrain Model (DTM)	Coverage of coastal sections of the study area
Sustrans	2020	National Cycle Network (GIS dataset) (available online: [REDACTED])	Full coverage of the study area

17.4.3 Site Surveys

20. The SLVIA undertaken as part of this ES has been informed by desk-based studies and field survey work undertaken within the SLVIA study area. The landscape, seascape and visual baseline has been informed by desk-based review of landscape and seascape character assessments, and the ZTV, to identify receptors that may be affected by the offshore elements of the Project and produce written descriptions of their key characteristics and value.
21. For those receptors where a detailed assessment is required, primary data acquisition has been undertaken through a series of surveys. These surveys include field survey verification of the ZTV from terrestrial landscape character areas (LCAs), micro-siting of viewpoint locations, panoramic baseline photography and visual assessment survey from all representative viewpoints. These viewpoint photography, visual assessment and landscape assessment surveys have been undertaken during November and December 2022 and January 2023, as described in Table 17.4. Sea-based offshore surveys have not been undertaken as part of the SLVIA as seascape is primarily experienced from land based parts of the study area by the majority of people. No consultation feedback has been received identifying a need for sea-based survey work to be undertaken as part of the SLVIA.

Table 17.4 Site surveys undertaken

Survey type	Survey type	Coverage of study area
November 2022	Seascape, landscape and visual assessment surveys to undertake viewpoint photography and collect baseline data on landscape character and visual amenity associated with views of the offshore elements of the Project and in accordance with methodology such as in GLVIA3 (Landscape Institute, 2013) and TGN 06/19 (Landscape Institute, 2019).	North Norfolk
December 2022	Seascape, landscape and visual assessment surveys to undertake viewpoint photography and collect baseline data on landscape character and visual amenity associated with views of the offshore elements of the Project and in accordance with methodology such as in GLVIA3 (Landscape Institute, 2013) and TGN 06/19 (Landscape Institute, 2019).	East Lindsey
January 2023	Seascape, landscape and visual assessment surveys to undertake viewpoint photography and collect baseline data on landscape character and visual amenity associated with views of the offshore elements of the Project and in accordance with methodology such as in	East Riding of Yorkshire and East Lindsey

Survey type	Survey type	Coverage of study area
	GLVIA3 (Landscape Institute, 2013) and TGN 06/19 (Landscape Institute, 2019).	

17.4.4 Existing Environment

17.4.4.1 Seascape Baseline

Definition of Seascape

22. The Marine Policy Statement (UK Government, 2011) states the European Landscape Convention definition of landscape (which includes marine areas) as *“an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”*. It adds that *“references to seascape should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other”*.
23. The seascape impact assessment in the SLVIA will therefore focus particularly on areas of onshore landscape where there is interaction with the coast or seas and marine environment. Landscape and seascape is a human interpretation of the local environment and it is considered most relevant to assess the potential effects of the Project from the coast, where the changes would be perceived by the greatest number of people.

Seascape Character

24. The seascape character of the SLVIA study area is defined at a national scale in the seascape assessments published by the MMO for the East Inshore and Offshore Marine Plan Areas (MMO, 2012). These studies produce a combined national seascape character map for all England’s inshore and offshore areas, comprising a spatial framework of individual Marine Character Areas which ‘flow across’ marine plan area and administrative boundaries. The Marine Character Areas identified within these MMO seascape assessments will form the baseline for the SLVIA study area as shown in Figure 17.9 of Volume 2, (document reference 6.2.17.9).
25. The seascape within which the Project array area and ANS areas are located is defined by the East Midlands Offshore Gas Fields Marine Character Area (Figure 17.9 of Volume 2, (document reference 6.2.17.9)). Situated at long distance from the coastline and extending to the seaward extents of the SLVIA study area, the East Midlands Offshore Gas Fields Marine Character Area is formed by an open expanse of sea with extensive shallow offshore waters generally below 30m, with sand banks and tidal sand ridges. The seascape is visually unified, with an expansive open character, but the character is influenced by concentrations of offshore gas and aggregate extraction activities, and commercial offshore activities such as dredging, aggregate extraction and fishing within the significant fisheries areas.

26. The existing Dudgeon, Race Bank and Triton Knoll OWFs are all located within this Marine Character Area, and the Hornsea Project One and Hornsea Project Two OWFs are located to the north within the Dogger Deep Water Channel Marine Character Area, so that OWFs form a key characteristic in the baseline character of the Marine Character Area.
27. The seascape of coastal waters between the array area and the coastal areas of Lincolnshire and North Norfolk is defined by the East Midlands Coastal Waters Marine Character Area. It consists of flat, low lying coastal landscape demonstrating a complex array of dynamic natural processes, with a dynamic seascape, shallow waters and extensive submerged sand flats. The seascape character is heavily influenced by the tides and the exposure of vast sand flats at low tide and the extensive linear coastal geometry creating long sweeping views along the coastline and out to sea. The perception of land and sea is strongly influenced by dunes and intertidal areas, influenced in places by concentrated urban settlements, commercial activities and both on and offshore windfarm developments and commercial offshore activities such as dredging.

17.4.4.2 Landscape Baseline

Landscape Character

28. At the National level, the SLVIA study area is characterised, from north to south, by the following National Character Areas (NCAs):
- Holderness (NCA 40) is a rural, low-lying, undulating plain with the broad, shallow valley of the River Hull flowing southwards through the centre;
 - Humber Estuary (NCA 41) focuses on the open and expansive waters of the Humber where it flows into the North Sea and the adjacent low-lying land;
 - Lincolnshire Coast and Marshes (NCA 42) is a wide coastal plain which extends from Barton-upon-Humber in the north, across to Grimsby at the mouth of the Humber and south to Skegness; and
 - North Norfolk Coast (NCA 77) is the flat, low-lying, open and remote coastal plain that dominates the North Norfolk Coast landscape, consisting of salt marsh, marram grass, sand dunes and shallow channels of mudflats.
29. The landscape of the onshore parts of the study area is informed by these NCAs, however it is described and assessed in relation to the published County Council and District Council Landscape Character Assessments that describe the associated coastal landscapes within the SLVIA study area shown in ~~Figure~~[Figures 17.10a and 17.10b](#) of Volume 2, (document reference 6.2.17.10), as follows:
- East Riding of Yorkshire Landscape Character Assessment 2018;
 - East Lindsey District Landscape Character Assessment 2009; and

- North Norfolk Landscape Assessment 2018.

30. The Project may influence the visual aspects of perceived character experienced in sea views from several landscape types forming a narrow strip of the immediate coastal Landscape Character Types (LCTs) forming the closest parts of the coastline. These are relatively long stretches of coastline which are varied in character, with geographic extents likely to be concentrated on the narrow strip of immediate coastal landscape, including the following coastal LCTs in the SLVIA study area:

- East Riding of Yorkshire – Withernsea to Spurn Coast (20A) and Spurn Point Heritage Coast (21A);
- East Lindsey – Donna Nook to Gibraltar Point Naturalistic Coast (K1) and Tetney Lock to Skegness Coastal Outmarsh (J1); and
- North Norfolk – Drained Coastal Marshes (DCM1 and DCM2), Open Coastal Marshes (OCM1), Coastal Shelf (CS1).

Landscape Designations and Defined Areas

31. The offshore areas of the Order Limits are located beyond the boundaries of any areas subject to international, national or regional landscape designation intended to protect landscape quality, as shown in Figure 17.11 of Volume 2, (document reference 6.2.17.11).
32. Certain nationally designated landscapes or defined areas found within the study area have been designated or defined due to their scenic qualities or historic landscape qualities and are of relevance to the SLVIA as shown on Figure 17.11 of Volume 2, (document reference 6.2.17.11) and set out in Table 17.5.
33. The Lincolnshire Wolds AONB is located outside the 60km radius study area for the array area, at over 63.9km from the Project array area at its nearest point, however it is located within the 30km study area for the ORCPs and therefore considered further as part of the assessment in Section 17.7.

Table 17.5 Landscape designations with relevance to the SLVIA and the Project

Designation	Closest distance to the array area	Feature or Description
Norfolk Coast AONB	55.0km	<p>The Norfolk Coast AONB is a protected National Landscape that sweeps around most of the coast of Norfolk. Comprising 451 square kilometres of intertidal, coastal and agricultural land that stretches across the territory of three different local authorities and one county council, the AONB is characterised by natural landscapes, and renowned as one of the few lowland areas in the UK to have ‘wildness’ quality. It is physically split into three separate zones, with the central zone falling partially within the SLVIA study area between Scolt Head and Sheringham (with a stretch forming the North Norfolk Heritage Coast). The special qualities that underpin the designation of the Norfolk Coast AONB are derived from its natural environment, sense of tranquillity, wildness and remoteness, richness of the built environment and connections between local communities and the landscape, and are described in full in the Norfolk Coast AONB Five Year Strategy 2019-2024. The Norfolk Coast AONB Management Plan (Norfolk Coast Partnership, 2019-2024) sets out the special qualities of the Norfolk Coast AONB, as follows:</p> <ul style="list-style-type: none"> ▪ 1. Dynamic character and geomorphology of the coast. Movement and interchange of internationally recognised geomorphological features and habitats. ▪ 2. Strong and distinctive links between land and sea. The area’s distinctive and unique character is based on the visual, ecological, socio-economic and functional links between land and sea. ▪ 3. Diversity and integrity of landscape, seascape and settlement character. Key quality is based on maintaining diversity of character types rather than uniformity across the area, including landscapes and seascapes, settlement pattern, building materials and styles. ▪ 4. Exceptionally important, varied and distinctive biodiversity, based on locally distinctive habitats. Recognised by a range of national and international designations. Coastal habitats are particularly important and most famous for birds, supporting iconic species. Inland habitats and species are also important, particularly lowland heath.

Designation	Closest distance to the array area	Feature or Description
		<ul style="list-style-type: none"> ■ 5. Nationally and internationally important geology. Mainly based on past glaciation and current coastal processes. Includes landforms and landscape scale features as well as individual sites. ■ 6. Sense of remoteness, tranquillity and wildness. A low level of development and population density for lowland coastal England, leading to dark night skies and a general sense of remoteness and tranquillity away from busier roads and settlements and, particularly for undeveloped parts of the coast, of wildness. ■ 7. Richness of archaeological heritage and historic environment, particularly that relating to the coast and its character. Evidence and features of human use of the area since prehistoric times and links to current uses and features.
Lincolnshire Wolds AONB	63.9km	<p>The Lincolnshire Wolds lie in the north-eastern part of Lincolnshire, midway between Lincoln and the coast, surrounded by the relatively flat fens, coastal marsh and the Central Lincolnshire Vale. The AONB comprises an area of 558km², located entirely outside the 60km radius study area for the array area, however the eastern part of the AONB is located within the 30km study area for the ORCPs. The Lincolnshire Wolds has a strong unity of visual character, characterised by open plateau hilltops, sweeping views, strong escarpments, wide grass verges and ridge-top routeways, dramatic wooded slopes and valleys, beech clumps, attractive villages often nestled in hill folds, and natural and historic features of great interest including visual remnants of ancient tumuli and deserted/shrunken medieval villages. Table 1 of The Lincolnshire Wolds AONB Management Plan (Lincolnshire Wolds AONB Partnership, 2018-2023) sets out the special qualities of the Lincolnshire Wolds AONB, as follows:</p> <ul style="list-style-type: none"> ■ A rolling upland landscape of strongly cohesive identity. ■ A pronounced scarp edge to the west comprising rough pasture and scrub, affording fine panoramic views to the Central Lincolnshire Vale. ■ A combination of elevated plateau and deep-sided valleys. ■ Large rectilinear fields with wide hedgerows from the late enclosure.

Designation	Closest distance to the array area	Feature or Description
		<ul style="list-style-type: none"> Archaeologically rich, with ancient trackways, deserted villages and burial mounds. Sparse settlements of small-nucleated villages, often in sheltered valleys and associated with modest country houses and small parklands. The diverse geology gives rise to a variety of building materials. Broad verges to some roads and tracks providing valuable flower-rich habitats. Occasional shelterbelts concentrated on steeper-sided valley and scarp slopes emphasising landform. Broader south-west valleys of the Rivers Lymn and Bain. Associated alder carr woodland and tree-lined watercourses.
North Norfolk Heritage Coast	55.0km	In managing the Norfolk Coast AONB, the Norfolk Coast Partnership also has a non-statutory responsibility to protect the North Norfolk Heritage Coast, a stretch running from Holme-next-the-Sea to Weybourne that is an officially defined landscape in its own right, and which is recognised as a stretch of undeveloped coast.
Spurn Head Heritage Coast and Local Landscape Area (LLA)	54.7km	Spurn Heritage Coast is defined by the peninsula of Spurn Point which forms a curving hook of shingle and sand arcing into the mouth of the Humber River, between the North Sea and the Humber Estuary. At over three miles long but as little as 50m wide, this landscape is unique and ever-changing. Spurn has an extensive human history, leaving a legacy of derelict buildings and hidden structures. The area is a designated National Nature Reserve (NNR) and is part of the Humber Flats, Marshes and Coast Special Protection Area.
Sheringham Hall Registered Park and Garden (RPG)	59.3km	Sheringham Hall is a RPG and National Trust property with public access, affording views of the North Norfolk coast through Sheringham Park. Viewing platforms and the Temple which stands above Sheringham Hall provide vantage points from which to look over the surrounding countryside and the coast to the north.

Visual Receptors

34. The principal visual receptors in the study area are found along the closest sections of coastlines at Spurn Head in East Riding of Yorkshire, the East Lincolnshire coast between Donna Nook and Skegness and from the North Norfolk coast between Scolt Head and Sheringham. Visual receptors include people within settlements, driving on roads, visitors to tourist facilities or historic environment assets, and people engaged in recreational activity such as those using walking and cycle routes, including:

- Coastal settlements - including Easington in East Riding of Yorkshire; North Somercotes, Saltfleet, Mablethorpe, Sutton-on-Sea, Chapel St Leonards, Ingoldmells and Skegness in East Lincolnshire; and Blakeney, Cley-next-the-Sea, Salhouse, Weybourne, Sheringham and West Runton in North Norfolk;
- Recreational routes - including the England Coast Path between Mablethorpe and Skegness; the Norfolk Coast Path between Scolt Island and Sheringham in North Norfolk; and National Cycle Route 1 in North Norfolk;
- Main road routes - including the A1031 and A52 in East Lincolnshire; and the A149 in North Norfolk;
- Visitors to tourist facilities - such as the sea fronts/beaches of the main coastal towns/resorts, holiday villages and nature reserves/visitor centres including Spurn Head NNR in East Riding of Yorkshire; Donna Nook and Saltfleetby - Theddlethorpe Dunes NNRs in East Lincolnshire; and Scolt Island, Holkham and Blakeney NNRs in North Norfolk;
- Visitors to historic environment assets such as Spurn Lighthouse and National Trust sites such as Brancaster Estate, Blakeney Point and Sheringham Park; and
- Offshore visual receptors – such as recreational sea users, people travelling on ferries, and people working in fisheries, oil and gas, or other offshore commercial activities.

Viewpoints

35. The Scoping Report identified eight viewpoints for inclusion in the SLVIA for the offshore elements of the Project. Consistent with the Guidelines for Landscape and Visual Impact Assessment, the selection of these was based on analysis of the ZTV and the identification of key visual receptors in the study area, such as coastal settlements, recreational routes, transport routes, tourist facilities/destinations and key local attractions and focal points, including heritage assets. The viewpoints proposed at scoping stage were concentrated along the coastline and extended throughout the terrestrial part of the 60km study area for the proposed OWF.

36. No specific comments in relation to the proposed viewpoint selection were received in meetings prior to the ETG meeting in December 2022 and limited comments were included in the Scoping Opinion. However, at the ETG meeting in December, the need to provide more detail on viewpoint selection was highlighted. In parallel, fieldwork to capture viewpoint photography was being undertaken, with this taking place during November and December 2022 and January 2023. Whilst the viewpoints captured during this fieldwork reflect those identified in the Scoping Report, the exact locations were micro-sited based on observations made. In addition, the overall selection was reviewed and additional viewpoints have been identified for inclusion in the SLVIA. The Scoping Opinion includes comments from the Planning Inspectorate that no views from offshore receptors are identified in the Scoping Report. In response two viewpoints, Viewpoint 11 and Viewpoint 12, with associated wireline visualisations (Figures 17.35 and 17.36 of Volume 2, (document reference 6.2.17.35 and 6.2.17.36)), are included in this assessment.
37. Since the publication of the Scoping Report elements of the Project design have also evolved, including the potential requirement for up to two ORCPs, which could comprise offshore platforms up to 90m long x 90m wide x ~~90m high~~ 59.2m high (plus ancillary elements such as masts and antennae up to 20m above this envelope). It is anticipated that these could be positioned between 12km and 17km from the coastline, within the Offshore ECC. The inclusion of these was referred to at ETG meetings since 12 December 2022. A 30km study area has been applied around the ORCPs, with a worst case current assumption that the ORCPs could be positioned approximately 12km from the coastline. The inclusion of the ORCPs in the Project has also influenced the proposed viewpoint selection. The Scoping Opinion also makes reference to potential views of the ORCPs from the Lincolnshire Wolds AONB. Whilst no specific locations were suggested in the Scoping Opinion the proposed viewpoint selection takes account of the ORCPs. These viewpoints were included in the PEIR and no comments have been received from stakeholders in response to this selection.
38. The viewpoint selection is provided in Table 17.6 below. This is broadly reflective of the spread of viewpoints proposed in the Scoping Report and is consistent with those included in the PEIR. Minor adjustments to the locations of certain viewpoints have been made, compared with those identified in the Scoping Report. Reflecting on the comments made during the ETG meeting on 12 December 2022, additional viewpoints have been included where these are considered appropriate. The viewpoint photography that has been obtained is included in Figures 17.25 to 17.36 of Volume 2, (document references 6.2.17.25 to 6.2.17.36), noting that viewpoints 11 and 12 are illustrated by wirelines only. The proposed viewpoint locations are shown on multiple Figures e.g. Figure 17.2 and 17.3 of Volume 2, (document reference 6.2.17.2 and 6.2.17.3) together with detailed viewpoint location maps included in Figures 17.25 to 17.36 of Volume 2, (document reference 6.2.17.25 to 6.2.17.36).

Table 17.6 Viewpoints selected for inclusion in the SLVIA

No.	Name	National Grid Reference	Distance to Project	Landscape Designation	Visual Receptors and notes
East Riding of Yorkshire					
1	Spurn Head, near the Yorkshire Wildlife Trust Discovery Centre	541840, 415334	Array area: 58.9km ORCPs: 40.2km ANSs: not visible	Spurn Heritage and LLA Head Coast	Visitors to Spurn Head Heritage Coast, NNR and the associated beach, footpaths.
East Lincolnshire					
2	Donna Nook	542726, 399853	Array area: 58.4km ORCPs: 28.4km ANSs: not visible	No landscape designation	Visitors to Donna Nook NNR. The viewpoint is positioned on top of the sand dunes, as described in section 17.7.
3	Saltfleetby-Theddlethorpe Dunes	546826, 391851	Array area: 56.3km ORCPs: 20.7km ANSs: not visible	No landscape designation	Visitors to Saltfleetby-Theddlethorpe NNR. The viewpoint is located on the top of the sand dunes, to the east of the car park, where there is a timber platform and interpretation board.
4	Mablethorpe	550862, 385254	Array area: 55km ORCPs: 14.8km ANSs: not visible	No landscape designation	Residents of Mablethorpe. Visitors to Mablethorpe Beach. Walkers on England Coast Path.
5	Chapel Six Marshes	555941, 374263	Array area: 56.1km ORCPs: 12.7km	No landscape designation	Visitors to Chapel Six Marshes. Walkers on England Coast Path.

No.	Name	National Grid Reference	Distance to Project	Landscape Designation	Visual Receptors and notes
			ANSs: not visible		
6	Lincolnshire Wolds between Rigsby and Haugh	542424, 375713	Array area: 66.9km ORCPs: 24.2km ANSs: not visible	Lincolnshire Wolds AONB	Principally walkers and road users, broadly representative of views from higher ground on the east side of the Lincolnshire Wolds AONB.
North Norfolk					
7	Wells-next-to-the-Sea Beach	591488, 345590	Array area: 59.7km ORCPs: not visible ANSs: not visible	Norfolk Coast AONB and North Norfolk Heritage Coast	Visitors to Well-next-to-the-Sea Beach.
8	Cley Beach	604798, 345252	Array area: 58km ORCPs: not visible ANSs: not visible	Norfolk Coast AONB and North Norfolk Heritage Coast	Visitors to Cley Beach. On the emerging route of the England Coast Path.
9	Sheringham	615439, 343516	Array area: 59.5km ORCPs: not visible ANSs: not visible	No landscape designation	Residents of Sheringham, Walkers on England Coast Path.
10	Sheringham Park, Gazebo	613278, 342418	Array area: 60.5km ORCPs: 62.3km ANSs: 58.6km	Norfolk Coast AONB, Sheringham Hall Registered Park and Garden	Visitors to Sheringham Park, broadly representative of views from higher ground to the south of the Norfolk coastline.

No.	Name	National Grid Reference	Distance to Project	Landscape Designation	Visual notes	Receptors and
			(southern ANS area)			
Offshore						
11	Ferry route corridor (south west of array area) – Kingston upon Hull to Rotterdam or Zeebrugge	597966, 389760	Array area: 15.3km ORCPs: 33.1km ANSs: 34.5km (northern ANS area)	No seascape designation	Ferry passengers, travelling between the UK and continental Europe. Assumed deck height of 20m above sea level.	
12	Ferry route corridor (northeast of array area) – Newcastle Upon Tyne/North Shields to Amsterdam	633346, 435342	Array area: 13.3km ORCPs: not visible ANSs: not visible	No seascape designation	Ferry passengers, travelling between the UK and continental Europe. Assumed deck height of 20m above sea level.	

39. In addition to the viewpoints proposed in the Scoping Report and consistent with the PEIR, a representative viewpoint on the east facing slopes (and eastern edge of) of the Lincolnshire Wolds AONB has been included. The key reason for the inclusion of this viewpoint is in relation to the potential requirements for the ORCPs. This comprises Viewpoint 6: Lincolnshire Wolds between Rigsby and Haugh.

40. A viewpoint at the Gazebo (platform at tree canopy level) in Sheringham Park (Sheringham Hall RPG) is also included in the viewpoint selection. This viewpoint supplements the viewpoints located along the Norfolk coastline, which were already included in the SLVIA scope. This location is positioned slightly inland and therefore has a different context to the coastal viewpoints. It is located on the rising ground that lies to the south of the coastline, with an open view towards the North Sea. It is positioned within the Norfolk Coast AONB and Sheringham Park (Sheringham Hall RPG), noting that Sheringham Park comprises a National Trust property and is therefore open to the public and promoted as a local visitor destination. The Gazebo is also marked as a viewpoint on Ordnance Survey maps.

41. As per the PEIR, minor refinements have been made in relation the exact locations of the viewpoints included in the Scoping Report. Notable refinements have been made at Spurn Head and Donna Nook. At Spurn Head the viewpoint has been positioned on the coastline close to the Yorkshire Wildlife Trust Spurn Discovery Centre and the associated car park. This is a location likely to be visited by the greatest number of people and the view obtained is comparable with views along the east side of Spurn Head.
42. At Donna Nook the viewpoint is positioned on the sand dunes behind the coastline. Whilst there is a footpath that leads towards the coastline through the entrance to Royal Air Force (RAF) Donna Nook, this was closed when the fieldwork was undertaken due to seal breeding season. The seal breeding colony is a local attraction that draws people to this location, with the area for viewing the seals located on a section of coastline that faces north. The viewpoint is positioned on raised ground along an access route from one of the car parks and therefore is likely to reflect a location accessed by people visiting the coastline, with the relative elevation affording views to the North Sea. The views towards the North Sea are restricted in part by intervening vegetation. However, the viewpoint selected was the most open location identified during the fieldwork.
43. Two offshore locations are also included in the viewpoint selection (viewpoints 11 and 12). These have been positioned on the edges of the route corridors typically taken by ferries between the UK and continental Europe. Viewpoint 11 is positioned on the route between Kingston upon Hull and Rotterdam or Zeebrugge. Viewpoint 12 is positioned on the route between Newcastle Upon Tyne/North Shields and Amsterdam. For both of these viewpoints a deck height of 20m has been assumed (21.5m observer height).

Visibility (Weather Conditions)

44. The Met Office defines visibility as “*the greatest distance at which an object can be seen and recognised in daylight, or at night could be seen if the general illumination were raised to a daylight level*” (Met Office, 2000).
45. The MMO seascape assessments note that it is a windswept coast “*with frequent ‘haar’, or coastal fog, caused by warmer moist air moving over the relatively cooler North Sea*” (MMO, 2018), where “*changeable weather creates dynamic and variable experiences*” (MMO, 2012).

46. A quantitative description of the existing visibility is provided using Meteorological Aerodrome Report (METAR) visibility data from the closest Met Office weather station at Donna Nook, to highlight potential trends in the visibility conditions of the Study Area. This 'visibility data', presented in Table 17.7, shows a ten-year average of the frequency of observations at measured distances from the station between January 2012 to December 2021. The visibility range is shown in bands relating to the Met Office definitions of visibility (very poor to excellent) to show the likely frequency of visibility at different distance ranges. This is illustrated graphically in ~~Figure~~[Figures 17.13](#)[13a and 17.13b](#) of Volume 2, (document reference 6.2.17.13).

Table 17.7 Frequency of visibility at different ranges as a percentage (Donna Nook weather station)

Visibility (km)	Yearly average visibility frequency (%)	Visibility range and definition	% visibility frequency (over 10 years)	Days per year visibility frequency (10 year average)
<1	1.24	<1km Very poor	1.24%	4.5
1 to 1.99	1.00	1-4km Poor	4.18%	15.3
2 to 2.99	1.42			
3 to 3.99	1.75			
4 to 4.99	2.09	4-10km Moderate	13.63%	49.7
5 to 5.99	2.28			
6 to 6.99	2.22			
7 to 7.99	2.23			
8 to 8.99	2.40			
9 to 9.99	2.41			
10 to 10.99	2.47	10-20km Good	31.19%	113.8
11 to 11.99	2.59			
12 to 12.99	2.80			
13 to 13.99	3.02			
14 to 14.99	3.14			
15 to 15.99	3.37			
16 to 16.99	3.34			
17 to 17.99	3.49			
18 to 18.99	3.49			
19 to 19.99	3.49			
20 to 20.99	3.53	20-40km Very good	42.59%	155.5
21 to 21.99	3.33			
22 to 22.99	3.24			

Visibility (km)	Yearly average visibility frequency (%)	Visibility range and definition	% visibility frequency (over 10 years)	Days per year visibility frequency (10 year average)
23 to 23.99	3.09			
24 to 24.99	3.04			
25 to 25.99	2.91			
26 to 26.99	2.63			
27 to 27.99	2.45			
28 to 28.99	2.29			
29 to 29.99	2.09			
30 to 34.99	8.50			
35 to 39.99	5.51			
40 to 44.99	3.37	40 - 50km Excellent	5.18%	18.9
45 to 49.99	1.81			
50 to 59.99	1.44	>50km Excellent	2%	7.3
60 to 69.99	0.36			
>70	0.19			

47. The visibility frequency data presented in Table 17.7 provides an understanding about the amount of time when visibility is experienced at the distances required to see Wind Turbine Generators (WTGs) within the array area.

48. The closest sections of the East Riding of Yorkshire, East Lincolnshire and North Norfolk coastlines fall within 53-60km of the array area, where excellent visibility over 50km would be required to see the WTGs within the array area. The Met Office data shows that such excellent visibility over 50km occurs for approximately 2% of the time over the ten-year period. This equates to approximately seven days per year on average when there may be visibility beyond 50km with theoretical visibility of the WTGs within the array area at this distance. [At 12km from the East Lincolnshire coast, the ORCPs would be seen when moderate visibility or better occurs. Therefore, these structures are likely to be visible approximately 80%, or approximately 295 days of the year, based on the Met Office data.](#)

Zone of Theoretical Visibility (ZTV)

49. The visual baseline is largely defined by the ZTV shown in Figure 17.3 and Figure 17.4 of Volume 2, Appendix 17.2, (document reference 6.2.17.3 and 6.2.17.4) for the array area and Figure 17.14 of Volume 2, (document reference 6.2.17.14) for the ORCPs. The ZTV in Figure 17.3 and Figure 17.4 shows the main area in which the WTGs in the Project array area would theoretically be visible, highlighting the different groups of people who may experience views of WTGs located within the Project array area and assisted in the identification of viewpoints where they may be affected. A ZTV has also been prepared for the ANSs, shown in Figure 17.20, (document reference 6.2.17.20).
50. The ZTV is based on WTGs of 403m blade tip (above Lowest Astronomical Tide (LAT)) and represents the Maximum Design Scenario (MDS) for the SLVIA. The ZTV illustrates where there would be no visibility of these WTGs, as well as areas where there will be lower or higher numbers of WTGs theoretically visible.
51. The ZTV illustrates the 'bare ground' situation based on an Ordnance Survey (OS) terrain model and does not take into account the screening effects of vegetation, buildings, or other local features that may prevent or reduce visibility. By using a bare ground elevation model, the results will be an over-representation of maximum visibility, as many could, in reality, be blocked by surface features not included in the model.
52. The Blade Tip ZTV (Figure 17.3 and Figure 17.4 of Volume 2, (document reference 6.2.17.3 and 6.2.17.4)) shows the main areas of higher theoretical visibility of the WTGs will be from offshore areas of the North Sea. All areas of the UK coastline are located beyond 50km, at which point, the number of visible WTGs reduces, the amount of the WTGs visible over the horizon will be less and the apparent height of WTGs will be smaller, and will only be viewed in excellent visibility conditions, which is rare.
53. The Blade Tip ZTV does show that there is theoretical visibility of the WTGs from the coastal parts of the SLVIA study, at very long distances, including from Spurn Head in East Riding of Yorkshire to the north at 56.7km; from the East Lincolnshire coast between Donna Nook and Skegness at 52.7km; and from the North Norfolk coast between Scolt Head and Sheringham at 56.6km. These are the closest areas of land with theoretical visibility of the WTGs, all of which are located at very long distance, but may afford views in very infrequent periods of excellent visibility.

54. The area of theoretical visibility of the WTGs becomes more fragmented from the hinterland and inland areas of the SLVIA study area, where views of the sea become increasingly screened within the headlands, adjacent rising land or coastal landforms. Areas with lower theoretical visibility are shown in the ZTV and include the Humber Estuary, the low lying coastal outmarshes of East Lincolnshire, and the saltmarshes to the north of The Wash. Actual visibility from these hinterland and inland areas also becomes increasingly screened by vegetation, such as woodland and hedgerows, and/or built development and settlement. Visibility from streets, open spaces and low storey buildings within coastal urban areas will typically be contained within the urban environment by surrounding built form, with most visibility of the Project likely at the coastal edge and sea front.
55. The analysis of the potential visibility of the offshore elements of the Project has been informed by the field survey work that has been undertaken. Along the coastline of north Norfolk, key views towards the Project are likely to be obtained from the coastal edge and beaches. Inland from this, around the marshes and creeks, potential visibility would be more limited, with the vegetation and marshes restricting views to the North Sea. These limitations to visibility of the Project also result from the distance between north Norfolk and the Project's array area and the influence that curvature of the Earth would have on the extent of the WTG that would be visible. This is demonstrated by the wireline drawings included in the Scoping Report (Appendix B - Seascape, Landscape and Visual Wirelines) (ODOW, 2022). Further inland, the landform generally rises affording more open views towards the North Sea, although with local restrictions arising from local landform and vegetation.
56. A similar pattern is applicable along the Lincolnshire coastline, with open views from the coastal edge and beaches. However, inland from this the landscape comprises a low lying, flat coastal plain, with limited views to the North Sea. The landform rises at the edges of the Lincolnshire Wolds AONB and the increased elevation affords open view towards the North Sea from certain locations. However, woodland limits the extent of such locations and the broad ridge of the Wolds also gradually limits long distance views in an easterly direction.

57. A small part of the East Riding of Yorkshire coast is included in the 60km study area, at Spurn Head. There are open views across the North Sea from the coastal edge and beach on the eastern side of Spurn Head. The principal routes to Spurn Point, at the southerly tip of Spurn Head, including a track and Public Right of Way, are located on the eastern side of the sand dunes. The location of this route largely prevents views to the North Sea due to the intervening dunes and vegetation, and the focus of views is the Humber Estuary to the west. The notable exception to this is the section of Spurn Head that has been damaged by the sea in recent years. There are also routes up on to the sand dunes in places, such as in the vicinity of the lighthouse. Spurn Point itself is also a landmark and destination people walking along Spurn Head, with this marked by an area of decking and a post. However, views to the North Sea in an easterly direction are restricted (filtered) by the vegetation on the sand dunes, and the main open views are to the southeast, across the North Sea, and southwest, across the Humber Estuary. It is also noted there is potential for Spurn Head to be breached in future years³, which may affect access to parts of this landscape.
58. ZTVs that show the potential influence of surface features on theoretical visibility (Figure 17.5 and 17.6 of Volume 2, (document reference 6.2.17.5 and 6.2.17.6)) and hub height visibility (Figure 17.7 of Volume 2, (document reference 6.2.17.7)). Both these ZTVs demonstrate that visibility of the WTGs from onshore locations is likely to be largely truncated or become increasingly fragmented by the sea banks, sand dunes and settlements along the coastline.
59. The ZTV in Figure 17.14 of Volume 2, (document reference 6.2.17.14) shows the main area in which the ORCPs would theoretically be visible. It highlights the different groups of people who may experience views of the proposed ORCPs and assisted in the identification of viewpoints where they may be affected.
60. The ZTV is based on ORCPs with a maximum height of ~~90m~~59.2m (above LAT) for the main body of the structure and represents the MDS for the SLVIA. This ~~90m takes~~59.2m does not take account of ~~the maximum height of the main ORCPs plus key~~ ancillary elements positioned on top of this. ~~There may be potential for elements, which could comprise structure~~ such as masts, ~~radar and or~~ antennae up to extend 20m in height above this ~~90m~~ envelope. The ZTV illustrates where there would be no visibility of these ORCPs.

³ <https://www.eastriding.gov.uk/coastalexplorer/pdf/5spurn.pdf>

61. As with the ZTV for the WTGs, this illustrates the ‘bare ground’ situation based on an OS terrain model and does not take into account the screening effects of vegetation, buildings, or other local features that may prevent or reduce visibility. By using a bare ground elevation model, the results will be an over-representation of maximum visibility, as many could, in reality, be blocked by surface features not included in the model.
62. The ORCP ZTV (Figure 17.14 of Volume 2, (document reference 6.2.17.14)) shows the main areas of higher theoretical visibility will be from offshore areas of the North Sea. The ZTV shows theoretical visibility along the coastline throughout the 30km study area. This visibility extends inland across the low lying coastal plain and to the east facing slopes of the Lincolnshire Wolds. In reality vegetation within this landscape, together with the sea banks, sand dunes and settlements along the coastline are likely to reduce the extent of visibility compared with that indicated by Figure 17.14 of Volume 2, (document reference 6.2.17.14). A ZTV that show the potential influence of surface features on theoretical visibility of the ORCPs is included in Figures 17.15 and 17.16 (Volume 2, (document reference 6.2.17.15 and 6.2.17.16)). The ZTV demonstrate that visibility of the ORCPs from onshore locations would be reduced and become increasingly fragmented due to the sea banks, sand dunes and settlements along the coastline.
63. The ZTV for the ANSs (Figure 17.20 of Volume 2, (document reference 6.2.17.20)) show limited theoretical visibility associated with these proposed structures in relation to terrestrial parts of the SLVIA study area. The potential visibility associated with these proposed structures is largely within the North Sea and defined by curvature of the earth. There are small onshore areas where the ANSs would be potentially visible, but these are outside the SLVIA study area and approximately 55km from closest part of the ANS areas, i.e. the closest positions the ANSs could be located to the coastline.

17.4.5 Future Baseline

64. The baseline character of the landscape in the study area is likely to change in the future as a result of the effects of climate change, land use policy, environmental improvements and development pressures, regardless of whether the Project progresses to construction or not.
65. A range of policies impact on the management of the landscape, ranging from international obligations, national policy and regulation, through to community strategies and development frameworks. Landscape planning policies covering the coastal landscape within the study area, such as the AONBs and Heritage Coasts, generally seek to conserve and enhance the natural beauty of the area, while recognising the need to adapt to inevitable change over time, particularly in such a dynamic coastal landscape shaped by coastal processes, and the need to respond to development pressures that reflect the changing needs of society.

66. There is overwhelming evidence that global climate change, influenced by the human use of fossil fuels, raw materials and intensive agriculture, is occurring (Intergovernmental Panel on Climate Change (IPCC), 2014). Any notable change in climate is likely to present potential changes to the coastline of the study area in a variety of ways. The legislative framework already exists to ensure that no net loss of internationally important habitat occurs, but there remains a need to increase understanding of the potential effects of climate change on the characteristic landscapes of the study area and to develop longer term strategies that will mitigate any adverse effects of climate change.
67. Linked with climate change, coastal erosion is likely to result in change to the baseline context of the Project, with the potential for this to occur within the operational life of the Project. Much of the coastline within the study area is low lying and comprises areas of sand dunes, mud flats and salt marsh. Parts of this may be lost or changed as result of coastal erosion. A demonstrable example of this within the SLVIA study area is Spurn Head and the ZTV analysis section above references the potential for this to be breached at some point in the future as a result of coastal processes and erosion.
68. Further development pressures which may change the baseline conditions, include suburbanisation and increased tourist development influences, particularly around the coastal landscapes and established coastal towns within the study area, which have potential to increase the developed influence and reduce perceived naturalness of the coastline.

17.5 Basis of Assessment

17.5.1 Scope of the Assessment

17.5.1.1 Impacts Scoped in for Assessment

69. The following impacts have been scoped into this assessment:

- Construction:
 - Impact 1: Potential effects on seascape character as a consequence of construction activities within the array area and associated with the ORCPs;
 - Impact 2: Potential effects on landscape character as a consequence of construction activities within the array area and associated with the ORCPs;
 - Impact 3: Potential effects on landscape designations as a consequence of construction activities within the array area and associated with the ORCPs; and
 - Impact 4: Potential effects on visual receptors as a consequence of construction activities within the array area and associated with the ORCPs.
- Operation and maintenance:

- Impact 1: Potential effects on seascape character as a consequence of the operation of the WTGs and ORCPs;
 - Impact 2: Potential effects on landscape character as a consequence of the operation of the WTGs and ORCPs;
 - Impact 3: Potential effects on landscape designations as a consequence of the operation of the WTGs and ORCPs; and
 - Impact 4: Potential effects on visual receptors as a consequence of the operation of the WTGs and ORCPs.
- Decommissioning:
 - Impact 1: Potential effects on seascape character as a consequence of the decommissioning activities within the array area and decommissioning of the ORCPs;
 - Impact 2: Potential effects on landscape character as a consequence of the decommissioning activities within the array area and decommissioning of the ORCPs;
 - Impact 3: Potential effects on landscape designations as a consequence of the decommissioning activities within the array area and decommissioning of the ORCPs; and
 - Impact 4: Potential effects on visual receptors as a consequence of the decommissioning activities within the array area and decommissioning of the ORCPs.

17.5.1.2 Impacts Scoped Out of Assessment

70. In line with the Scoping Opinion (The Planning Inspectorate, 2022), and based on the receiving environment, expected parameters of the Project (Chapter 3 (~~Document Reference~~[document reference](#) 6.1.3), and expected scale of impact/potential for a pathway for effect on the environment, the following impacts have been scoped out of the assessment:

- Construction:
 - Impact 1: seascape, landscape and visual effects beyond 60km of the array area;
 - Impact 2: effects resulting from construction of the array area on physical aspects of landscape character.
 - Impact 3: construction effects resulting from the offshore cables;
 - Impact 4: effects resulting from array area lighting during construction; and
 - Impact 5: effects resulting from ANSs.
- Operation and maintenance:
 - Impact 1: Seascape, landscape and visual effects beyond 60km of the array area;

- Impact 2: operational effects resulting from the offshore cables;
 - Impact 3: effects resulting from aviation and marine navigation lighting within the array area during the operation of the Project;
 - Impact 4: effects resulting from ANSs;
 - Impact 5: cumulative effects with the operational Hornsea One and Hornsea Two operational windfarms and the consented Hornsea Three windfarm; and
 - Impact 6: transboundary impacts.
- Decommissioning:
 - Impact 1: Seascape, landscape and visual effects beyond 60km of the array area;
 - Impact 2: effects resulting from decommissioning of the array area on physical aspects of landscape character.
 - Impact 3: decommissioning effects resulting from the offshore cables; and
 - Impact 4: effects resulting from array area lighting during decommissioning.

71. Two ANSs are proposed to the south-east and north-west of the array area. These would comprise structures approximately 23m by 23m, and up to 60m above LAT. The closest of the ANS areas to the coastline would be to the north east of the array area, with a minimum distance of approximately 47km from the coastline. The closest section of coastline would be eastern edge of the East Riding of Yorkshire. However, the height of the proposed structures, combined with the elevation of the coastline and curvature of the earth means there would be no or very limited visibility of the ANSs. The ANS area to the south east of the array area would be located approximately 55km from the closest section of the Norfolk coastline.

72. The ZTVs for the ANSs (Figure 17.20 of Volume 2, (document reference 6.2.17.20)) show limited and fragmented theoretical visibility associated with these proposed structures in relation to terrestrial parts of the SLVIA study area. There are small onshore areas where the ANSs would be potentially visible, but these are approximately 55km from closest part of the ANS areas, i.e. the closest positions the ANSs could be located to the coastline. Whilst the ANSs would be visible from offshore locations, this would be in the context of existing offshore structures and an expansive area of open sea. Therefore, it is anticipated that these structures would not result in significant effects on seascape, landscape or visual receptors.

17.5.2 Realistic Worst Case Scenario

73. Table 17.8 Maximum design scenario for seascape, landscape and visual receptors for the Project alone identifies the MDS in environmental terms, defined by the Project design envelope.

Table 17.8 Maximum design scenario for seascape, landscape and visual receptors for the Project alone

Potential effect	Maximum design scenario assessed	Justification
Construction		
Impacts 1 to 4: effects of the construction of the ORCPs on seascape and landscape character, landscape designations and visual receptors	Construction of 2 ORCPs, topside 90m x 90m x 30m 59.2m tall (up to 90m above LAT inclusive), <u>exclusive</u> of ancillary elements but excluding such as masts and of antennae , the main structure having a maximum height of approximately 60m, which would be up to 20m above LAT <u>this envelope</u> . Mounted on jacket foundations. Located in likely closest part of the offshore ECC to the coastline (from approximately 12km).	ORCPs are positioned as close to the coastline as is possible to occur, where the largest number of receptors are found. Maximum overall dimensions applied.

Potential effect	Maximum design scenario assessed	Justification
Operation and Maintenance		
Impacts 1 to 4: effects of the array area and ORCPs on seascape and landscape character, landscape designations and visual receptors	<p>Operation of 50 WTGs, 403m above LAT to tip, 340m rotor diameter, with jacket foundations arranged in N-S grid formation monopile foundation. Note that, whilst up to 100 WTGs may be constructed, a maximum of 50 WTGs with the largest dimensions could be constructed within the array area. The larger turbines are considered to be a worst case for the SLVIA due to the increased potential that these would be visible from the terrestrial part of the study areas, where the greatest number of visual receptors are located.</p> <p>Operation of 2 offshore substations within array area 160m x 110m x 100m (above LAT including ancillary elements).</p> <p>Operation of 1 offshore accommodation platform 84m x 84m x 80.2m tall.</p> <p>Operation of 2 ORCPs, topside 90m x 90m x 90m <u>59.2m</u> tall (above LAT inclusive), <u>exclusive</u> of ancillary elements, excluding such as masts and antennae), the main structure having a maximum height of approximately 60m, which would be up to 20m above LAT this envelope. Mounted on jacket foundations. The Project will comply with legal requirements with regards to shipping, navigation and aviation marking and lighting, including the ORCPs. The ORCPs would not have any personnel working on them at night and therefore no operational lighting is <u>typically</u> expected to be required, <u>beyond normal working hours</u>. Located in likely closest part of the offshore ECC to the coastline (from approximately 12km).</p>	<p>Largest WTGs with largest rotor diameters likely to have most widespread significant effects.</p> <p>Maximum dimensions applied for other offshore elements.</p> <p>ORCPs are positioned as close to the coastline as is possible to occur, where the largest number of receptors are found.</p> <p>Maximum overall dimensions applied.</p>
Decommissioning		

Potential effect	Maximum design scenario assessed	Justification
Impacts 1 to 4: effects of the decommissioning of the ORCPs on seascape and landscape character, landscape designations and visual receptors	Decommissioning of 2 ORCPs, topside 90m x 90m x 90m <u>59.2m</u> tall (above LAT inclusive), <u>exclusive</u> of ancillary elements, excluding such as masts and antennae , the main structure having a maximum height of approximately 60m , <u>which would be up to 20m</u> above LAT this <u>envelope</u> . Mounted on jacket foundations. Located in likely closest part of the offshore ECC to the coastline (from approximately 12km).	ORCPs are positioned as close to the coastline as is possible to occur, where the largest number of receptors are found. Maximum overall dimensions applied.

17.5.3 Embedded Mitigation

74. Mitigation measures that were identified and adopted as part of the evolution of the project design (embedded into the project design) and that are relevant to seascape, landscape and visual receptors are listed in Table 17.9.

Table 17.9 Embedded mitigation relating to seascape, landscape and visual receptors

Project phase	Mitigation measures embedded into the project design
General	
Operation and maintenance	Lighting and marking in agreement with Trinity House, the Maritime and Coastguard Agency (MCA), and CAA, and in compliance with International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) G1162 (IALA, 2021).
Construction, operation and maintenance, and decommissioning	The ORCPs will be positioned a minimum of 12km from the closest part of the coastline, compared with an initial minimum distance of 6km. This greater minimum separation distance from the coastline helps to reduce the potential prominence of the ORCPs from terrestrial receptors in the study area.

17.6 Assessment Methodology

17.6.1 Overview

75. The assessment has been undertaken in accordance with the Landscape Institute and IEMA (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3), and other best practice guidance. The methodology used to undertake the SLVIA is set out in full in Appendix 17.1 (~~Document Reference~~ [document reference](#) 6.3.17.1) and summarised as follows. The SLVIA assesses the likely effects that the construction, operation and decommissioning of the offshore elements of the Project on the seascape, landscape and visual resource, encompassing effects on seascape/landscape character, designated landscapes, visual effects and cumulative effects.
76. The SLVIA is based on the Project design envelope described in Chapter 3 (~~Document Reference~~ [document reference](#) 6.1.3) and the MDS identified as appropriate for the SLVIA as described in Section 17.5. In compliance with EIA regulations, the likely significant effects of a realistic 'worst case' scenario are assessed and illustrated in the SLVIA.
77. Essentially, the seascape, landscape and visual effects (and whether they are significant) is determined by an assessment of the 'sensitivity' of each receptor or group of receptors and the 'magnitude of change' that would result from the Project.

78. The evaluation of sensitivity takes account of the value and susceptibility of the receptor to the offshore elements of the Project. This is combined with an assessment of the magnitude of change which takes account of the size and scale of the proposed change. By combining assessments of sensitivity and magnitude of change, a level of seascape, landscape or visual effect can be evaluated and determined. The resulting level of effect is described in terms of whether it is significant or not significant, and the geographical extent, duration and the type of effect is described as either direct or indirect; temporary or permanent (reversible); cumulative; and beneficial, neutral or adverse.
79. The assessment has also considered the whole Project inter-related effects of the offshore and offshore elements of the Project, as well as the cumulative effects likely to result from the offshore elements of the Project and other similar proposed developments.
80. In each case an appropriate and proportionate level of assessment has been undertaken and agreed through consultation at the scoping stage. The level of assessment may be 'simple' (requiring desk-based data analysis) or 'detailed' (requiring site surveys and investigations in addition to desk-based analysis).
81. The SLVIA unavoidably, involves a combination of quantitative and qualitative assessment and wherever possible a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach.

17.6.2 Defining Impact Significance

82. The matrix presented in Table 17.10 is used as a guide to illustrate the SLVIA process, helping to inform the threshold of significance when combining sensitivity and magnitude to assess significance. In line with the emphasis placed in GLVIA3 upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessment made for each landscape and visual receptor.
83. The significance of the effect on each seascape/landscape character and visual receptor is dependent on all of the factors considered in the sensitivity of the receptor and the magnitude of change resulting from the Project. Factors which influence levels of sensitivity and magnitude of change assessed in the SLVIA are set out in full in Appendix 17.1 (~~Document~~ [Reference document reference](#) 6.3.17.1). Judgements on sensitivity and magnitude of change are combined to arrive at an overall assessment as to whether the Project will have an effect that is significant or not significant on each seascape/landscape and visual receptor.

84. Significant seascape, landscape and visual effects are highlighted in bold and shaded dark green in Table 17.10. They relate to all those effects that result in a 'Major' or a 'Major/Moderate' level of effect. The white/un-shaded cells are not significant, however in some circumstances, 'Moderate' levels of effect (shaded green) do have the potential, subject to the assessor's opinion, to be considered as significant and these exceptions are also highlighted in bold in the text and has been explained as part of the assessment, where they occur. White/un-shaded boxes in Table 17.10 indicate a non-significant effect.

85. In those instances where there would be no effect, the magnitude has been recorded as 'Zero' and the level of effect as 'None'.

86. Assessment of the significance of potential effects is described in Table 17.10.

Table 17.10 Matrix to determine effect significance

		Magnitude of change					
		<i>Negligible</i>	<i>Low</i>	<i>Medium-low</i>	<i>Medium</i>	<i>Medium-high</i>	<i>High</i>
Sensitivity of receptor	<i>Low</i>	Negligible (not significant)	Negligible (not significant)	Minor/negligible (Not significant)	Minor (Not significant)	Moderate/minor (Not significant)	Moderate/minor (Not significant)
	<i>Medium-low</i>	Negligible (not significant)	Minor/negligible (Not significant)	Minor (Not significant)	Moderate/minor (Not significant)	Moderate (potentially significant)	Moderate (potentially significant)
	<i>Medium</i>	Minor/negligible (Not significant)	Minor (Not significant)	Moderate/minor (Not significant)	Moderate (potentially significant)	Moderate (potentially significant)	Major/moderate (Significant)
	<i>Medium-high</i>	Minor (Not significant)	Moderate/minor (Not significant)	Moderate (potentially significant)	Moderate (potentially significant)	Major/moderate (Significant)	Major (Significant)
	<i>High</i>	Minor (Not significant)	Moderate/minor (Not significant)	Moderate (potentially significant)	Major/moderate (Significant)	Major (Significant)	Major (Significant)

17.6.2.1 Geographical Extent

87. The geographic extent over which the seascape/landscape and visual effects will be experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude, but instead expresses the extent of the receptor that will experience a particular magnitude of change and therefore the geographical extents of the significant and not significant effects.
88. The extent of the effects varies depending on the specific nature of the Project and is principally assessed through analysis of the extent of perceived changes through visibility of the Project.

17.6.2.2 Duration and Reversibility

89. The duration and reversibility of seascape, landscape and visual effects is based on the period over which the Project is likely to exist and the extent to which it will be removed and its effects reversed at the end of that period. OPEN's methodology does not include duration and reversibility as part of magnitude of change, as there is potential that the reversibility aspect could alter or reduce potentially significant effects even though they are long-term. The duration and reversibility of the effects is instead determined separately in relation to the assessed effects.
90. Long-term, medium-term and short-term seascape/landscape effects are defined as follows:
- Long-term – more than ten years;
 - Medium-term – six to ten years; and
 - Short-term – one to five years.
91. Duration and reversibility are not incorporated into the assessment of magnitude of change, but are stated separately in relation to the assessed effects (i.e. as short/medium/long-term and temporary/permanent) and are considered as part of drawing conclusions about significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.

17.6.3 Visual representations methodology

92. The methodology for the production of visual representations (photomontages and ZTVs) of the offshore elements of the Project is set out in full in Appendix 17.1 (~~Document~~ [Reference document reference](#) 6.3.17.1).

93. The visual representations presented in Figure 17.25 to Figure 17.36 of Volume 2 , (document reference 6.2.17.25 to 6.2.17.36) have been produced in accordance with Visual Representation of Windfarms (Scottish Natural Heritage (now NatureScot), 2017) and Visual Representation of Development Proposals (TGN 06/19) (Landscape Institute, 2019). The ZTVs prepared for the Project, e.g. Figure 17.3 of Volume 2, (document reference 6.2.17.3), have also been produced in line with guidance in Visual Representation of Windfarms (SNH, 2017) and are generated using GIS software (ESRI ArcGIS Version 10.5) to model the theoretical visibility of the offshore elements of the Project.

17.6.4 Assumptions and Limitations

94. The SLVIA is based on the adoption of worst case scenario approach to cope with uncertainties and reduce risk of later design modifications falling outside of the assessment envelope. The parameters applied in this worst case scenario are described in Section 17.5.
95. There are some data limitations relating to seascape, landscape and visual amenity however these do not affect the robustness of the assessment of this ES as the gaps are limited and will not affect the assessments of likely significance assessed for relevant receptors.
96. There are limitations in the production of photomontage and wireline visualisations and ZTVs as assessment tools, and limitations in the accuracy of DTM data. The use of detailed terrain models (OS Terrain 5), production of visualisations to recognised standard and field survey assessment of impacts minimises these limitations.
97. Met Office visibility data has limitations in its application to judgements about windfarm visibility. The visibility data provides some understanding and evidence basis for evaluating the visibility of the WTGs against their background. Effects have not been downgraded either in magnitude or significance due to variations as a result of weather/visibility and how frequently/infrequently the effects will be experienced. Effects are based on the worst case with clear visibility and need to be considered in context of the limited time effects will actually occur.
98. The photographs and other graphic material such as wirelines and photomontages used in this assessment are for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what has been apparent to the human eye. The assessments are carried out from observations in the field (with the exception of Viewpoints 11 and 12) and therefore may include elements that are not visible in the photographs. The photomontage visualisations of the offshore elements of the Project (and any windfarm proposal) have a number of limitations when using them to form a judgement on visual impact. These include the following:
- A visualisation can never show exactly what the offshore elements of the Project will look like in reality due to factors such as: different lighting, weather and seasonal conditions which vary through time and the resolution of the image;

- The images provided give a reasonable impression of the scale of the WTGs and the distance to the WTGs but can never be 100% accurate;
- A static image cannot convey turbine movement, or flicker or reflection from the sun on the turbine blades as they move;
- The viewpoints illustrated are representative of views in the area, but cannot represent visibility at all locations;
- To form the best impression of the impacts of the offshore elements of the Project these images are best viewed at the viewpoint location shown;
- The images must be printed and viewed at the correct size (260mm by 820mm);
- Images should be held flat at a comfortable arm's length. If viewing these images on a wall or board at an exhibition, stand at arm's length from the image presented to gain the best impression;
- It is preferable to view printed images rather than view images on screen. Images on screen should be viewed using a normal PC screen with the image enlarged to the full screen height to give a realistic impression; and
- There are practical limitations to shooting viewpoint photographs only in very good or excellent visibility and at particular times of day. The photographs shown in the visualisations show the most favourable weather conditions available during photographic survey work.

17.7 Impact Assessment

17.7.1 Construction

99. This section presents the assessment of impacts arising from the construction phase of the Project.

100. Initial review of the potential effects of the array area identified that significant effects were unlikely to occur in relation to most seascape, landscape and visual receptors. It is still considered that this would be case. However, the Scoping Opinion identified that that Planning Inspectorate has concerns about the potential effects that may result from the offshore elements of the Project. The following sections comprise a concise, high-level analysis of potential effects associated with construction activities.

17.7.1.1 Impacts 1 to 4: effects of construction activities within the array area and associated with the ORCPs on seascape and landscape character, landscape designations and visual receptors

Effects on Seascape Character

101. The construction of the offshore elements of the Project has the potential to result in adverse effects on the perceived seascape character of Marine Character Areas, particularly Marine Character Area 3 (East Midlands Offshore Gas Fields), and Marine Character Area 7 (East Midland Coastal Waters), as shown in Volume 2, Figure 17.9, (document reference 6.2.17.9). The array area is positioned within Marine Character Area 3, East Midlands Offshore Gas Fields, and the offshore ECC is routed through this Marine Character Area and then the adjacent Marine Character Area 7 (East Midland Coastal Waters) to the cable landfall. The ORCPs will be positioned in Marine Character Area 7, East Midland Coastal Waters.
102. Adverse effects relating to the array area and ORCPs on seascape character will occur as a result of the associated construction activities, including the presence of jack-up vessels and/or dynamic positioning heavy lift vessels for the installation of foundations, substructures and the ORCPs itself, windfarm service vessels and accommodation vessels. These activities may combine to alter the seascape character of the area within part of the ECC and the perceived character of the wider seascape through visibility of the construction activities.
103. The residual effects arising as a result of the construction activities associated with the array area and ORCPs are assessed as being of the same magnitude and significance on all seascape character receptors as those arising due to their operation and maintenance, as described in Section 17.7.2. The size/scale of the changes during this phase would be no greater than the operational phase, and the geographic extent of the change would also be no greater than the operational phase. The residual effects would be short term and temporary, occurring during the length of this phase and differing in nature from the operational effects mainly due to the influence of the various construction vessels in the seascape, which would not be present or result in effects during the operational phase.

Effects on Landscape Character and Designations

104. The construction of the offshore elements of the Project has the potential to result in adverse effects on the perceived character of the landscape character areas, designations and their special qualities. These effects are predicted to ~~be primarily~~ be primarily associated with the construction of the ORCPs. The minimum 12km separation distance between the array area and the coastline would limit any effects associated with associated construction activities.

105. Adverse effects on landscape character have the potential to occur as a result of the construction activities related to the array area and ORCPs. This would include the presence of jack-up vessels and/or dynamic positioning heavy lift vessels during the construction phase for the installation of foundations, substructures, WTGs offshore platforms and the ORCPs, windfarm service vessels and accommodation vessels. These activities may combine to alter the perceived character of the wider landscape.
106. The residual effects arising as a result of the construction activities associated with the array area and ORCPs are assessed as being of the same magnitude and significance on all landscape character receptors as those arising due to their operation and maintenance, as described in Section 17.7.2. The residual effects would be short-term and temporary, occurring during the length of this phase and differing in nature from the operational effects mainly due the influence of the various construction vessels visible during this phase, which will not be present or result in effects during the operational phase.

Effects on Views and Visual Amenity

107. The construction of the offshore elements of the Project has the potential to result in adverse effects on views and visual amenity. This would include the presence of jack-up vessels and/or dynamic positioning heavy lift vessels during the construction phase for the installation of foundations, substructures, WTGs, offshore platforms and the ORCPs, windfarm service vessels and accommodation vessels. These activities may combine to affect views and visual amenity.
108. The residual effects arising as a result of the construction activities associated with the array area and ORCPs are assessed as being of the same magnitude and significance on visual receptors as those arising due to their operation and maintenance, as described in Section 17.7.2. The residual effects would be short-term and temporary occurring during the length of the construction phase and differing in nature from the operational effects mainly due the influence of the various construction vessels visible during the construction phase, which will not be present or result in effects during the operational phase.

17.7.2 Operation and Maintenance

109. This section presents the assessment of impacts arising from the operational and maintenance phase of the Project.
110. The landscape and visual effects of the offshore elements of the Project are assessed within the main geographic 'receptor areas', which are linked with the local authority administrative boundaries within the SLVIA study area (Figure 17.2 of Volume 2,(document reference 6.2.17.2)):
- East Riding of Yorkshire – specifically Spurn Head, which lies in the northwest part of the study area, including the Spurn Head Heritage Coast and LLA;

- East Lincolnshire – specifically the coastline of East Lindsey District, and also the 30km study area associated with the ORCPs, including the Lincolnshire Wolds AONB; and
- North Norfolk – comprising the northern coastal edge of North Norfolk District, which is in on the southern edge of the SLVIA study area, including the Norfolk Coast AONB and North Norfolk Heritage Coast;

111. The potential effects of the offshore elements of the Project on the seascape, landscape and visual receptors are considered in the following assessment.

17.7.2.1 Impacts 1 and 2: effects of the array area and ORCPs on seascape receptors

112. The operations and maintenance phase of the Project has the potential to result in adverse effects on the perceived seascape character of Marine Character Areas, particularly Marine Character Area 3 (East Midlands Offshore Gas Fields), and Marine Character Area 7 (East Midland Coastal Waters), as shown in Figure 17.9 of Volume 2, (document reference 6.2.17.9). The array area is positioned within Marine Character Area 3 (East Midlands Offshore Gas Fields), and the offshore ECC is routed through this Marine Character Area and then the adjacent Marine Character Area 7 (East Midland Coastal Waters) to the cable landfall. The ORCPs would be positioned in Marine Character Area 7, East Midland Coastal Waters.
113. The seascape character areas (SCAs) transition from the coastal waters, comprising a strip of up to approximately 17km from the coastline within the study area, to the open parts of the North Sea. The corresponding Marine Character Areas have a partly industrialised character, influenced by the multiple operational windfarms, comprising Inner Dowsing, Lynn, Lincs, Sheringham Shoal, Race Bank, Dudgeon, Humber Gateway, Westernmost Rough, Hornsea One and Hornsea 2, together with offshore gas extraction and marine aggregate extraction..
114. Seascape value is considered to be medium-low. The Marine Character Areas are broadly not covered by designations that relate to their character, although the sections of Heritage Coast extend into the coastal Marine Character Areas. The Norfolk Coast AONB also lies adjacent to Marine Character Area, 7 East Midlands Coastal Waters.
115. The susceptibility of seascape character is considered to be medium-low due to the way in which it has been altered by human activities. The Project has the potential to further alter its character through the addition of further structures emerging from the sea. However, the position of the array area in relation to operational windfarms limits its susceptibility to similar development.
116. On the basis of the above judgements, taking account of value and susceptibility, the sensitivity of the seascape character is assessed as medium-low.

117. Based on the MDS for the SLVIA the offshore elements of the Project would introduce up to 50 tall, widely spaced WTGs, together with a number of offshore platforms. The majority of these elements would be positioned over 54km from the nearest coastline and form part of a series of similar developments in the North Sea. The ORCPs would be positioned where seascape character is more diverse and influenced by the coastal edge, but in this context it would still be present in conjunction with baseline windfarm developments. The ORCPs will be marked in accordance with relevant guidance from relevant ~~aviation and navigation stakeholder~~ stakeholders e.g. the ~~Civil Aviation Authority (CAA) and the Marine Character Area~~ Maritime and Coastguard Agency. The ORCPs would not have any personnel working on them at night and therefore no operational lighting is expected to be required beyond normal working hours, with the exception of a possible requirement during emergency maintenance- (see Outline ORCP Lighting Management Plan, document reference 8.23) . Navigation ~~and aviation~~ lights are expected to be limited in number and seen in the context of baseline offshore windfarms, offshore oil and gas structures and vessel movements the associated change would be limited. The biogenic reef areas would not involve any above water elements other than vessels involved in their establishment. The magnitude of change, during the operational phase, in relation to the perceived character of Marine Character Areas is assessed as being no greater than medium.
118. Therefore, it is currently predicted that the effects of offshore elements of the Project would be **no greater than moderate/minor** and not significant. These effects would be adverse, long term, but reversible.

17.7.2.2 Impacts 1 and 2: effects of the array area and ORCPs on landscape receptors

East Riding of Yorkshire

119. The operations and maintenance phase of the Project has the potential to result in adverse effects on the perceived landscape character of the East Riding of Yorkshire. However, only a small part of the local authority area lies within the SLVIA study area, overlapping predominately with LCA21A Spurn Point Heritage Coast and the most southerly extent of LCA20A Withernsea to Spurn Coast. Figure 17.10 (Volume 2 (~~Document Reference~~ document reference 6.2.17.10)) demonstrates that the ZTV overlaps with these LCAs and field survey work has confirmed that the Project would be theoretically visible.
120. LCA21A Spurn Head Heritage Coast comprises narrow peninsula of coastal sand dune. It was formed by debris washed down the coastline from the soft cliffs to the north. It is a distinctive and unique landscape with a sense of remoteness resulting from the limited access. Its distinctiveness and value are recognised by the Heritage Coast Designation, which is backed up by the policies relating to Important Landscape Areas in the East Riding Local Plan 2012 – 2029.

121. Landscape value within this part of the East Riding of Yorkshire is considered to be medium-high, reflective of the Heritage Coast designation and also the uniqueness of Spurn Head as a landscape feature.
122. The susceptibility of landscape character is considered to be low. The nature of the landscape affords frequent open, panoramic views over the North Sea. However, such views include the operational Humber Gateway OWF and Triton Knoll OWF. The susceptibility of the landscape to the Project would also be moderated by the intervening seascape context stretching over 55km between the LCA and the edge of the array area. This vast seascape context and separation would limit the extent to which the WTGs within the array area may influence the perceived character of the landscape. In addition, taking account of the visibility predictions in the data obtained from the Met Office weather station at Donna Nook (Section 17.4) it is predicted that the offshore elements of the Project would only be susceptible to being seen from this LCA for a very limited proportion of the year.
123. On the basis of the above judgements, taking account of value and susceptibility, the sensitivity of the seascape character is assessed as medium.
124. The offshore elements of the Project would introduce approximately 50 tall (noting that this is considered to be the worst case in relation to the SLVIA, as set out in Table 17.8), widely spaced WTGs, together with a number of offshore platforms within the distant seascape context of the LCA. The majority of these elements would be positioned over 50km from the coastline of the LCA and form part of a series of similar developments in the North Sea. The ORCPs would be located over 30km from this LCA and, whilst the ZTV in Figure 17.14 of Volume 2, (document reference 6.2.17.14) shows theoretical visibility from this peninsula, it would comprise a very limited element in views. Whilst the ORCPs will be marked in accordance with relevant guidance from relevant ~~aviation and~~ navigation stakeholders, the separation distance from this LCA (over 30km) and context in relation to operational offshore windfarms would limit any potential associated effects. The biogenic reef areas would not involve any above water elements, other than vessels involved in their establishment. In addition, the biogenic reef areas are located over 35km from this LCA, further limiting any potential effects. The magnitude of change, during the operational phase, in relation to SCAs is assessed as being no greater than low.
125. Therefore, it is currently assessed that the effects of offshore elements of the Project would be no greater than **minor** and not significant in EIA terms. These effects would be adverse, long term, but reversible.

East Lincolnshire

126. The operations and maintenance phase of the Project has the potential to result in adverse effects on the perceived landscape character of East Lincolnshire. However, only a small part of the local authority area lies within the SLVIA study area for the array area, overlapping with the LCAs in the eastern part of the District:

- LCAI1 Holton le Clay to Great Steeping Middle Marsh;
- LCAJ1 Tetney Lock to Skegness Coastal Outmarsh; and
- LCAK1 Donna Nook to Gibraltar Point Naturalistic Coast.

127. However, in addition to the study area for the array area, the 30km study area for the ORCPs overlaps with East Lindsey District.

128. The relative proximity of the ORCPs to the coastline, at approximately 12km, means the 30km study area for these elements extends further inland than the study area for the array area. Therefore, in addition to the LCA identified above the ORCP study area also overlaps with LCAs A1 Stickney to Sibsey Reclaimed Fen, B1, Wainfleet All Saints to Friskney Settled Fen, C1 Wainfleet Reclaimed Saltmarsh, D1 Wainfleet Wash Saltmarsh, G2 Little Cawthorpe to Skendleby Wolds Farmland, G3 Hainton to Toyton All Saints Wolds Farmland and H1 Mareham to Little Steeping Fenside Woodland and Farmland.

129. The blade tip ZTV for the array area (e.g. Figure 17.3 and Figure 17.4 of Volume 2, (document reference 6.2.17.3 and 6.2.17.4)) shows potential visibility of wind turbines throughout the majority of the corresponding study area. However, the hub height ZTV in Figure 17.7 of Volume 2, (document reference 6.2.17.7) shows visibility largely truncated by the coastline. In relation to the ORCPs the ZTV in Figure 17.14, 17.15 and 17.16 of Volume 2, (document reference 6.2.17.14 ; 6.2.17.15 ; 6.17.2.16) shows theoretical visibility throughout a large proportion of the corresponding 30km study area. The main part of this 30km study area where theoretical visibility of the ORCPs would become much more limited in extent is the land west of the easterly ridgeline of the Lincolnshire Wolds, predominantly west of the A16 and A1028. The ZTVs show a distinct area just inland from the coastline, where the landform along the coastal edge prevents potential visibility of the ORCPs. The ZTV for the ORCPs is based on a maximum height of ~~90m~~ 59.2m above LAT, exclusive of ancillary elements such as masts of antennae, which would be up to 20m above this envelope (as outlined in Table 17.8). However, the main part of the ORCP structures would be a maximum thickness (vertical height) of 30m above the foundation and have a maximum height of approximately 60m above LAT, with elements above this comprising ancillary structures which would have a reduced mass. Elements such as mast and antenna may extend above this maximum height.

130. LCAK1 Donna Nook to Gibraltar Point Naturalistic Coast extends along the coastline throughout the study area (for both the array area and ORCPs) and much of its length largely includes a strip of vegetated sea banks, coastal sand dunes or, in the vicinity of coastal settlements, concrete promenades. Inland from this the majority of the LCAs are relatively flat, low lying landscapes, which together with the features along the coastline provides visual separation from the North Sea. The landform increases in elevation around the edges of the Lincolnshire Wolds, largely corresponding with LCAG2 within the 30km study area for the ORCPs. Given the intervening distance between the coastline and the array area, and to a lesser degree the ORCPs, and the limited intervisibility of the North Sea inland from the coastal edge, the following analysis concentrates on LCAK1 and LCAG2. This analysis is also informed by the visualisations that have been prepared for Viewpoints 2 to 6 (Figures 17.26 to 17.30 of Volume 2, (document reference 6.2.17.26 to 6.2.17.30)).
131. LCAK1 comprises a narrow coastal strip along the edge of Lincolnshire. It includes long sandy beaches, together with areas of mud flats and saltmarsh. The landward side is backed by vegetated sea banks, coastal dunes and in settled locations, concrete promenades. It is a distinctive and largely unspoilt natural landscape. There is a sense of remoteness and tranquillity, although this reduces in the vicinity of the coastal resorts and the Ministry of Defence (MOD) designated danger areas. Wide open, panoramic views, also extending across the North Sea are associated with this LCA.
132. LCAG2 comprises an elevated, rolling agricultural landscape in the south eastern part of the Lincolnshire Wolds AONB. It includes a mix of arable farmland, pasture and woodland, with the later framing views within and out from the LCA. Fields are typically divided by hedgerows, with hedgerow trees. The woodlands include ancient and semi-natural, and replanted woodlands. There are scattered villages within the valleys and parkland estates, including RPGs.
133. Based on evaluation of the baseline context, landscape value associated with LCAK1 is considered to be medium to high. It is not currently designated for its landscape value, although it is acknowledged that part of the coastline may be defined as a Heritage Coast in the future. The landscape value judgement is reflective of the relatively undeveloped nature of the majority of the LCA, but also the fact that the coastline is a promoted and popular destination.
134. The landscape value of LCAG2 is considered to be high, reflecting its characteristics and features and notably the AONB designation. The key special qualities of the AONB that have the potential to be affected by the Project, as set out in the Lincolnshire Wolds AONB Management Plan 2018 – 2023, are “*scenic beauty and rural charm*” and “*expansive sweeping views*”.

135. The susceptibility of LCAK1 to the Project considered to be medium. The nature of the landscape affords frequent open, panoramic views over the North Sea. However, such views include operational OWFs including Inner Dowsing, Lynn and Lincs OWFs, Race Bank OWF and Triton Knoll OWF. The susceptibility of the landscape to the Project would also be moderated by the intervening distance of over 55km to the edge of the array area. This distance would limit the extent of the WTGs that would be visible and its relative prominence. In addition, taking account of the visibility predictions in the data obtained from the Met Office weather station at Donna Nook (Section 17.4) it is predicted that the offshore elements of the Project in the array area would be seen from this LCA for a very limited proportion of the year. However, the judgement of medium susceptibility takes account of the two proposed ORCPs. These would be positioned approximately ~~7.4km~~ 12km from the closest part of the Lincolnshire coastline (and LCAK1). They would also contrast with the existing offshore WTG that are visible, which are the most conspicuous structures in the baseline context, comprising static platforms with a larger mass.
136. The susceptibility of LCAG2 to the Project is considered to be low. The nature of the landscape within the study area affords intermittent open, panoramic views over the landscape to the east. Whilst the North Sea is a component of these views it makes a relatively overall contribution to landscape character, and is not noted in the published landscape character assessment as a key characteristic. LCAG2 is located beyond the 60km study area for the array area. However, it lies within the 30km study area for the ORCPs located approximately 22km to the west of these proposed structures. Views east from this LCA include operational onshore wind turbines, including Gayton le Marsh Windfarm, Conisholme (Fen Farm) Windfarm and Bambers Windfarm, and in clear conditions OWFs such as Inner Dowsing. The susceptibility of the landscape to the Project would also be moderated by the intervening distance to the proposed offshore elements. This distance would limit the extent of the WTGs and ORCPs that would be visible and their relative prominence. In addition, taking account of the visibility predictions in the data obtained from the Met Office weather station at Donna Nook (Section 17.4) it is predicted that the offshore elements of the Project within the array area would be seen from this LCA for a very limited proportion of the year.
137. The ORCPs would be more visible than the elements within the array area due to the shorter separation distance. However, at a distance of approximately 22km they would comprise small components and would occupy a small proportion of the views that can be obtained. Such views are also constrained by the intermittent areas of woodland on the east facing slopes of the Lincolnshire Wolds.
138. On the basis of the above judgements, taking account of value and susceptibility, the sensitivity of the landscape character would be medium for both LCAK1 and LCAG2.

139. The offshore elements of the Project would introduce approximately 50 tall, widely spaced WTGs, together with a number of offshore platforms in the wider seascape context experienced from the coastal parts of these LCAs. The majority of these elements would be positioned over 50km from the coastline and form part of a series of similar developments in the North Sea. The perceptual change that would be attributable to the elements of the project within the array area would be limited in relation to both LCAK1 and LCAG2.
140. The ORCPs would comprise a more conspicuous structures in relation to LCAK1 and would be seen as part of the expansive open, panoramic views over the North Sea, which are a noted characteristic of this LCA. The intervening distance of approximately 12km, at the closest point, would limit the relative size of the ORCPs. However, their form would contrast with the baseline offshore wind turbines, which are visible from this coastline. However, one platform is already visible within the overall array of turbines that make up Inner Dowsing, Lynn and Lincs OWFs (see Figure 17.29d of Volume 2, (document reference 6.2.17.29)). The distance the two ORCPs would be positioned from the coastline would be similar to these baseline OWFs. They would also be present in a comparable part of the view, being located within approximately 7km to the north of the Lincs OWF turbines. The ORCPs will be marked in accordance with relevant guidance from relevant ~~aviation and~~ navigation stakeholders. However, the separation distance from the Lincolnshire coastline and context in relation to existing offshore windfarms would limit the potential magnitude of change associated with the any navigation ~~or aviation~~ lights on the structures- [\(see Outline ORCP Lighting Management Plan, Document Reference 8.23\).](#)
141. Whilst the biogenic reef area is relatively close to the Lincolnshire coastline The biogenic reef areas would not involve any above water elements, other than vessels involved in their establishment.
142. In relation to LCAG2, the greater separation distance from both the array area and ORCPs would reduce the potential magnitude of change, compared with LCAK1. At over 60km the elements within the array area are unlikely to readily discernible, even on a day with excellent visibility. At approximately 24km, based on the shortest distance from this LCA, the ORCPs, would be visible in clear conditions. However, this would be in the context of the intervening landscape between the LCA and the coastline. Navigation ~~or aviation~~ lights at this distance, and in the context of light sources in the intervening landscape, would result in very limited change. Overall, based on the intervening distance, and with reference to Figures 17.30e and 17.30f of Volume 2, (document reference 6.2.17.30), the ORCPs would not result in any notable changes to the characteristics of this landscape.
143. The magnitude of change, during the operational phase, in relation to LCAK1 is assessed as being medium, whilst in relation to LCAG2 this is assessed as being negligible.

144. Therefore, it is assessed that the effects of offshore elements of the Project would be no greater than **minor** and not significant in EIA terms in relation to LCAG2. However, a **moderate** and potentially significant effect in EIA terms is predicted in relation to LCAK1, due to the changes arising from the ORCPs. These effects would be adverse, long term, but reversible. The closest part of the Lincolnshire Wolds AONB relates to character area LCAG2, where the effect of the offshore elements of the Project is predicted to be **minor** and not significant in EIA terms. It is also predicted that there would not be a significant adverse effect on the special qualities or characteristics of the Lincolnshire Wolds AONB.
145. The moderate effects in relation to LCAK1 is considered to be **not significant** overall. The form and appearance of the ORCPs would differ from the baseline development. While there are similar structures associated with the existing windfarms, these are located within these developments, whereas the proposed ORCPs would stand as slightly isolated structures in the sea. The ORCPs would lie in front of Triton Knoll ~~WindFarm~~[Windfarm](#), however the relative distance to this windfarm (over 30km) limits its prominence. The ORCPs would comprise conspicuous structures where they are seen perpendicular to the coastline, however this would only be applicable to a relatively small part of the coastline between Mablethorpe and Chapel St Leonards. The LCT comprises a narrow strip of land along the majority of the Lincolnshire coast and therefore is influenced by a range of developments, notably the resort settlements and other recreational uses (such as caravan parks), together with offshore windfarms.

North Norfolk

146. The operations and maintenance phase of the Project has the potential to result in adverse effects on the perceived landscape character of North Norfolk. However, only a small part of the local authority area lies within the SLVIA study area, which extend inland for less than 5km. The study area includes a number of coastal LCTs and LCAs. These principally comprise coastal marshes (Open Coastal Marshes LCT and Drained Coastal Marshes LCT) and the western part of the Coastal Shelf LCT, behind which lie the northern fringes of the Rolling Open Farmland LCT, River Valley LCTs, Tributary Farmland LCT, Rolling Heath and Farmland LCT and the Wooded Glacial Ridge LCT.

147. In broad terms the coastal edge transitions from low lying coastal marshes in the west to a more elevated coastal shelf to the east, behind which the landform rises gradually, comprising an undulating landscape with a mix of agricultural uses, woodland and heath. The Open Coastal Marshes is characterised by an open coastal barrier beach system, with one of the largest area of undrained saltmarsh in Europe. Saltmarsh, with associated creek patterns, lies inland of a protective barrier of sand and shingle bars. The occurrences of Drained Coastal Marshes LCT are areas of former Open Coastal Marsh that have been drained and farmed, to comprise a flat open landscape with grazing marsh habitat, sand dunes, woodland and farmland. The Coastal Shelf LCT comprises a narrow strip of land, approximately 12 miles in length, but only approximately one mile deep. Within the study area it includes the settlement of Sheringham, set within arable farmland and woodland. There are sandy beaches and frequent cliffs along the coast.
148. Inland from the coastal landscapes the landform rises and become more diverse. The landscape is frequently open and elevated and comprises gently undulating/rolling farmland with areas of woodland and historic estates. There are areas of sandy soils, where agriculture is more marginal and there are areas of lowland heath (Rolling Heath and Arable LCT). The Wooded Glacial Ridge LCT relates to a terminal glacial moraine and forms a distinctive landscape feature with a wooded steep scarp slope to the north and more gentle arable slopes to the south. The more elevated, rolling/undulating landscape is dissected by occasional occurrences of the River Valleys LCT, including the River Stiffkey and River Glaven.
149. The landscape in North Norfolk that lies within the study area is entirely within the Norfolk Coast AONB and the North Norfolk Heritage Coast designation applies to part of the coastline. The Significance of the Norfolk Coast Landscape document (Norfolk AONB Management Plan 2014 – 2019, supporting information) sets out the qualities of this landscape. This document identifies the diverse mix of rolling hills, ridges of chalk, greensand and sands and gravels. Key characteristics include the exposed North Sea aspect, sand and shingle spits, coastal saltmarshes and areas of heathland. The document identifies that the coastal plain has a wilderness quality, attributed to the wide, open and unsettled character. With the rising landscape, with wooded hills and heathlands forming a backdrop to the coastline, and farmlands in the rest of the AONB contributing to its diversity. This document reflects on the scenic qualities of the landscape, with a mix of coastal features and contrasting agricultural landscapes inland. The sight and sound of the sea are noted as dominating features along the coastline, and also catching the eye from locations further inland. The diversity of the landscape and landform are identified as key features, combined with the mix of distinctive buildings and settlements. The document describes the literary and artistic associations with the landscape. In addition to the landscape characteristic and scenic qualities the document also describes the wildlife habitats and associated designations, together with the archaeological and cultural heritage assets.

150. Based on evaluation of the baseline context, landscape value is considered to be high, reflective of the characteristics and features described above.
151. The susceptibility of landscape character to the Project is considered to be low. The nature of the landscape within the study area affords frequent open, panoramic views over the North Sea. However, such views include the operational Sheringham Shoal OWF, Dudgeon OWF and Race Bank OWF. The susceptibility of the landscape to the Project would also be moderated by the intervening distance of over 50km to the edge of the array area and over approximately 30km to the ORCPs. This distance would limit the extent of the WTGs and ORCPs that would be visible and their relative prominence. In addition, taking account of the visibility predictions in the data obtained from the Met Office weather station at Donna Nook (Section 17.4) it is predicted that the offshore elements of the Project would be seen from this LCA for a very limited proportion of the year.
152. On the basis of the above judgements, taking account of value and susceptibility, the sensitivity of the seascape character would be medium.
153. The offshore elements of the Project would introduce approximately 50 tall, widely spaced WTGs, together with a number of offshore platforms in the wider seascape context experienced from the coastal parts of North Norfolk. The majority of these elements would be positioned over 50km from the coastline and form part of a series of similar developments in the North Sea. The ORCPs would be located over 30km from this LCA and, whilst the ZTV in Figure 17.14 of Volume 2, (document reference 6.2.17.14) shows theoretical visibility from North Norfolk, it would comprise a very limited element in views. Whilst the ORCPs will be marked in accordance with relevant guidance from relevant ~~aviation and~~ navigation stakeholders, the separation distance from this LCA would limit any potential associated effects. The biogenic reef areas would not involve any above water elements, other than vessels involved in their establishment. the biogenic reef area is located over 13km from this LCA, further limiting any potential effects. The magnitude of change, during the operational phase, in relation to LCAs is assessed as being no greater than low.
154. Therefore, it is assessed that the effects of offshore elements of the Project would be no greater than **minor** and not significant in EIA terms. These effects would be adverse, long term, but reversible. The closest part of the Norfolk Coast AONB relates to the LCAs described above (paragraphs 143 to 145). The effects of the offshore elements of the Project are assessed as being minor and not significant in EIA terms in relation to these LCA. Therefore, it is also predicted that there would not be a significant adverse effect on the special qualities or characteristics of the Norfolk Coast AONB.

17.7.2.3 Impacts 1 and 2: effects of the array area and ORCPs on visual receptors

155. The following visual assessment is based upon desk top review and a site-based assessment. Twelve representative viewpoints have been selected to demonstrate a range of views available around the SLVIA study area. These focus on terrestrial parts of the study area, where the highest concentrations of visual receptors are located. However, two viewpoints have been selected to represent offshore receptors. The location of these viewpoints is illustrated in various figures associated with the SLVIA e.g. Figure 17.2 of Volume 2, (document reference 6.2.17.2). For each of the terrestrial viewpoint, photographs of the existing views have been included alongside wirelines illustrating the offshore elements of the Project (see Figures 17.25 to 17.34 of Volume 2, (document reference 6.2.17.25 to 6.2.17.34)). The offshore viewpoints are represented by wirelines only (Figures 17.35 and 17.36 in Volume 2).
156. In accordance with the recommendations of GLVIA3 the significance of the potential visual effects has been determined by assessing both the sensitivity of visual receptors and the potential magnitude of visual effect.
157. The Project has the potential to affect numerous visual receptors, including residents, visitors to the East Riding of Yorkshire, Lincolnshire and Norfolk, walkers (including the Southwest Coast Path) and road users. The ZTVs demonstrate a high level of theoretical visibility in relation to offshore receptors, but a more variable pattern in relation to onshore receptors. Whilst elements of the project would be theoretically visible across much of the onshore parts of the study area the ZTV that takes account of surface features (Figures 17.5 and 17.6 of Volume 2 (document references 6.2.17.5 and 6.2.17.6)) and the hub height ZTV (Figure 17.7 of Volume 2, (document reference 6.2.17.7)) demonstrates this pattern would be constrained by the landform and features along the coastline. The wirelines that have been prepared for the viewpoints Figures 17.25 to 17.36 of Volume 2, (document references 6.2.17.25 to 6.2.17.6) demonstrate the relative scale of the Project in relation to baseline views. As referred to in relation to landscape effects, weather conditions are also an important consideration and there will be frequent occasions when the prevailing weather limits or prevents visibility of the proposed Project.
158. In relation to the onshore viewpoints, whilst the nature of the view obtained at each viewpoint is different, there are number of common themes. Each viewpoint allows an open and expansive view, in which the North Sea is a component, becoming a prominent and key component for the viewpoints along the coastline. The offshore elements of the Project have the potential to be visible from all the viewpoints selected. However, key factors that would influence this are the intervening distance, curvature of the Earth and the prevailing weather conditions. The rotation of the turbine blades and presence of aviation lighting have the potential to be visible. However, the distance between the coastline and the array area would limit the prominence of these in relation to onshore visual receptors.

159. Further inland, within the Lincolnshire Wolds, the relative elevation of the landscape allows expansive, panoramic views towards the North Sea. However, the distance to the coastline greatly reduces the prominence of the sea in such views. In addition, woodland on the east facing slopes also constrain views in places.
160. The ORCPs would be closer to the coastline than the array area, and have the potential to be more prominent elements from certain locations. The worst case scenario being assessed means these would be positioned approximately 12km from the Lincolnshire coastline and there would be two ORCPs being positioned approximately 90m apart, the closest distance they could be positioned to each other. Navigation ~~and aviation lights~~ on the ORCPs also have the potential to be visible at night: [\(see Outline ORCP Lighting Management Plan, document reference 8.23\).](#)
161. In relation to offshore visual receptors, people engaged in a range of activities are likely to see the offshore elements of the Project. Such receptors would include people travelling on recreational vessels and people travelling on ferries between Hull or Newcastle upon Tyne and continental Europe, together with people engaged in commercial or employment activities including fishing, cargo vessels and people employed in the offshore oil and gas industries and dredging for marine aggregates.
162. The offshore visual receptors considered to be more sensitive to the Project are people travelling on recreational vessels and ferries. This is due to a combination of the activity they are engaged in the and the likely level of attention placed on the view. Notwithstanding this, there would be factors that potentially reduce their relative sensitivity. Recreational vessels would be able to plan a journey that increases the separation distance between the vessel and the elements of the Project. Ferry passengers are principally travelling along a specific route with the objective being to get from place to place and the character of the route is more incidental to the journey. In both instances the Project is likely to be seen for a relatively small part of an overall journey. Other offshore receptors would be more focussed on the activity taking place and the context of that route or activity would make a limited contribution to the overall experience.
163. The rotation of the turbine blades and presence of aviation lighting would have the potential to draw attention to the WTGs, noting that the prominence of each of these factors would vary with distance and between day and night. The Project would comprise WTG with a height of 403m above LAT (to blade tip), based on the MDS being applied in the SLVIA, and the array would extend across the view with the horizontal extent of the view occupied varying with location. However, the array area is positioned over 50km from the nearest onshore visual receptors. This separation distance, combined with reduction in the vertical extent of the WTGs that would be seen as a consequence of the Earth's curvature would reduce the relative size of the structures. The WTGs would also always be seen in the context of baseline offshore windfarm developments which are already present in views across the North Sea. Therefore,

the Project would not be introducing new elements, but would be reinforcing a pattern created by the baseline offshore windfarms. In addition, the visibility data obtained from the Met Office identifies that the WTGs are likely to be seen for approximately seven days per year.

164. As the ORCPs would be positioned approximately 12km from the Lincolnshire coastline, these elements of the Project have the potential to be more prominent when seen by onshore visual receptors from this part of the coastline. The wirelines presented in Figures 17.25 to 17.36 of Volume 2, (document references 6.2.17.25 to 6.2.17.6) demonstrate the relative size of these structures, when seen from Spurn Head and the North Norfolk, would be diminished by the intervening distance and would form minor additions to the view in very clear weather conditions. At locations along the Lincolnshire coastline they would be more conspicuous and the detail of these platforms would be more discernible, particularly where the intervening distance is approximately 12km. A similar type structure, located at a comparable distance from the coastline forms part of Lincs Offshore Windfarm and is visible in the baseline photography for Viewpoint 5 (Figure 17.29d of Volume 2 (document reference 6.2.17.29)).
165. Inland from the coastline, whilst the ZTV in Figure 17.14 of Volume 2, (document reference 6.2.17.14) indicates theoretical visibility of the ORCPs, this is expected to be restricted or prevented by the mix of coastal settlements, sand dunes and sea banks, particularly due to the low lying landform. As the landform rises towards the Lincolnshire Wolds it is anticipated that the ORCPs would be seen from certain locations in the landscape, where the local landform and vegetation allows open views towards the coastline. However, in such instances the ORCPs would form a relatively small change in the baseline view. Such views would typically be open and panoramic and the ORCPs would be seen in the context of a diverse range of baseline landscape elements present between the Lincolnshire Wolds and the coastline. [The design principles for the ORCP are considered in ORCP Design Principles Statement \(document reference 21.16\).](#)
166. The Project would represent a long-term change, duration of the operational and maintenance phase. However, effects on visual amenity would be reversible following the decommissioning of the Project.
167. Table 17.11 and Table 17.12 below set out the assessment of the potential effects on visual amenity that are predicted to result from the Project. The tables identify the sensitivity of the visual receptor to the Project, the predicted magnitude of change based on the current Project design envelope and the potential visual effects and their significance.

Table 17.11 Assessment of sensitivity of viewpoints/visual receptors

Viewpoint	Receptors	Value ⁴	Susceptibility	Sensitivity
East Riding of Yorkshire				
Viewpoint 1: Spurn Head, near the Yorkshire Wildlife Trust Discovery Centre Distance to array area: 58.9km Distance to ORCPs: 40.2km Not visible	Visitors to Spurn Head Heritage Coast, NNR and the associated beach, footpaths.	High	Medium-high	Medium-high
East Lincolnshire				
Viewpoint 2: Donna Nook Distance to array area: 58.4km Distance to ORCPs: 28.4km 32.9km	Visitors to Donna Nook NNR. Close to, but not on the emerging route of the England Coast Path.	High	Medium-high	Medium-high
Viewpoint 3: Saltfleetby-Theddlethorpe Dunes Distance to array area: 56.3km Distance to ORCPs: 20.2km 24.7km	Visitors to Saltfleetby – Theddlethorpe NNR. The viewpoint is located on the top of the sand dunes, to the east of the car park, where there is a timber platform and interpretation board. Close to, but not on the emerging route of the England Coast Path.	High	Medium-high	Medium-high
Viewpoint 4: Mablethorpe Distance to array area: 55km Distance to ORCPs: 14.8km 18km	Residents of Mablethorpe. Visitors to Mablethorpe Beach. Walkers on England Coast Path.	Medium-high	Medium-high	Medium-high
Viewpoint 5: Chapel Six Marshes Distance to array area: 56.1km Distance to ORCPs: 12. 8km 1km	Visitors to Chapel Six Marshes. Walkers on England Coast Path.	High	Medium-high	Medium-high
Viewpoint 6: Lincolnshire Wolds between Rigsby and Haugh	Principally walkers and road users, broadly representative of views	High	Medium-high	Medium-high

⁴ Value and susceptibility judgements are based on the criteria set out in the SLVIA Methodology, Volume 2 Appendix 17.1 (document reference 6.3.17.1)

Viewpoint	Receptors	Value ⁴	Susceptibility	Sensitivity
Distance to array area: 66.9km Distance to ORCPs: 24.2km 25.1km	from higher ground on the east side of the Lincolnshire Wolds AONB.			
North Norfolk				
Viewpoint 7: Wells-next-to-the-Sea Beach Distance to array area: 59.7km Distance to ORCPs: not visible 40.2	Visitors to Well-next-to-the-Sea Beach.	High	Medium-high	Medium-high
Viewpoint 8: Cley Beach Distance to array area: 58km Distance to ORCPs: not visible	Visitors to Cley Beach. On the emerging route of the England Coast Path.	High	Medium-high	Medium-high
Viewpoint 9: Sheringham Distance to array area: 59.5km Distance to ORCPs: not visible	Residents of Sheringham, Walkers on England Coast Path.	High	Medium-high	Medium-high
Viewpoint 10: Sheringham Park, Gazebo Distance to array area: 60.5km Distance to ORCPs: 62.3km 57.9km	Visitors to Sheringham Park, broadly representative of views from higher ground to the south of the Norfolk coastline.	High	Medium-high	Medium-high
Offshore				
Viewpoint 11: Ferry route corridor (south west of array area) – Kingston upon Hull to Rotterdam or Zeebrugge Distance to array area: 15.3km Distance to ORCPs: 33.1km 32.6km	Ferry passengers, travelling between the UK and continental Europe.	Low	Medium	Medium-low
Viewpoint 12: Ferry route corridor (northeast of array area) – Newcastle Upon Tyne/North Shields to Amsterdam Distance to array area: 13 14.9.3km Distance to ORCPs: not visible	Ferry passengers, travelling between the UK and continental Europe.	Low	Medium	Medium-low

Table 17.12 Assessment of magnitude of visual change and potential effects on visual amenity

Viewpoint	Sensitivity	Magnitude	Effect and Significance	Rationale
East Riding of Yorkshire				
<p>Viewpoint 1: Spurn Head, near the Yorkshire Wildlife Trust Discovery Centre</p> <p>Distance to array area: 58.9km</p> <p>Distance to ORCPs: 40.2km Not visible</p>	Medium-high	Negligible	Minor – not significant	<p>WTGs would comprise distant elements, likely to be seen for a small number of days per year. Vertical extent of turbines visible would be limited by curvature of the Earth.</p> <p>WTGs would be positioned partly behind the operational Humber Gateway and Triton Knoll Offshore Windfarms.</p> <p>ORCPs would comprise small elements with visibility restricted by meteorological conditions and are not predicted to be visible due to the effect of curvature of the Earth.</p>
East Lincolnshire				
<p>Viewpoint 2: Donna Nook</p> <p>Distance to array area: 58.4km</p> <p>Distance to ORCPs: 28.4km 32.9km</p>	Medium-high	Negligible	Minor – not significant	<p>WTGs would comprise distant elements, likely to be seen for a small number of days per year. Vertical extent of WTGs visible would be limited by curvature of the Earth.</p> <p>WTGs would be positioned partly behind the operational Triton Knoll Offshore Windfarm.</p> <p>ORCPs would comprise relatively small elements with visibility restricted by meteorological conditions and curvature of the Earth. Intervening vegetation and landform would also prevent views of ORCPs from this specific location.</p>
<p>Viewpoint 3: Saltfleetby-Theddlethorpe Dunes</p>	Medium-high	Low	Moderate/minor – not significant	<p>WTGs would comprise distant elements, likely to be seen for a small number of days per year.</p>

Viewpoint	Sensitivity	Magnitude	Effect and Significance	Rationale
Distance to array area: 56.3km Distance to ORCPs: 20 <u>24</u> .7km				Vertical extent of turbines visible would be limited by curvature of the Earth. WTGs would be positioned almost entirely behind the operational Triton Knoll Offshore Windfarm. ORCPs would comprise relatively small elements in overall view. ORCPs would be positioned to the right of the principal focus of the view, eastwards towards the North Sea.
Viewpoint 4: Mablethorpe Distance to array area: 55km Distance to ORCPs: 14.8 <u>18</u> km	Medium-high	Medium-Low	Moderate – Not significant	WTGs would comprise distant elements, likely to be seen for a small number of days per year. Vertical extent of turbines visible would be limited by curvature of the Earth. WTGs would be positioned entirely behind the operational Triton Knoll Offshore Windfarm. ORCPs would be conspicuous but occupying a small extent of the view. The ORCPs would also be seen in the context of operational baseline offshore windfarms (to the fore of the operational Lincs Offshore Windfarm). ORCPs would be positioned to the right of the principal focus of the view, eastwards towards the North Sea. Navigation and aviation lights on the ORCPs are likely to be visible at night, but in the context baseline lighting in Mablethorpe. This level of effect results from the ORCPs rather than elements in the array area. This moderate effect is considered to be not significant based on a combination of the intervening

Viewpoint	Sensitivity	Magnitude	Effect and Significance	Rationale
				distance and also the context within which it would be seen. Whilst the ORCPs would comprise new structures in the sea, in views that are perpendicular to the coastline, they would still be experienced in the context of the baseline built form within Mablethorpe.
Viewpoint 5: Chapel Six Marshes Distance to array area: 56.1km Distance to ORCPs: 12. 8 <u>1</u> km	Medium-high	Medium	Major/moderate - significant	WTGs would comprise distant elements, likely to be seen for a small number of days per year. Vertical extent of turbines visible would be limited by curvature of the Earth. WTGs would be positioned almost entirely behind the operational Triton Knoll Offshore Windfarm. ORCPs would be conspicuous but occupying a small extent of the view. Navigation —and— aviation lights on the ORCPs are likely to be visible, but few people are likely to visit this location at night. The ORCPs would be seen in the context of operational baseline offshore windfarms, positioned to the left of the closest turbines within Linc Offshore Windfarm and to the fore of Race Bank Windfarm. ORCPs would be positioned directly within views eastwards, towards the North Sea and will contribute most to the effects assessed, which are considered to be major/moderate and significant in EIA terms from this viewpoint. This level of effect results from the ORCPs rather than elements in the array area.

Viewpoint	Sensitivity	Magnitude	Effect and Significance	Rationale
<p>Viewpoint 6: Lincolnshire Wolds between Rigsby and Haugh</p> <p>Distance to array area: 66.9km</p> <p>Distance to ORCPs: 24.2km 25.1km</p>	Medium-high	Negligible	Minor – not significant	<p>WTGs would comprise distant elements, likely to be seen for a small number of days per year. Vertical extent of turbines visible would be limited by curvature of the Earth.</p> <p>WTGs would be positioned entirely behind the operational Triton Knoll Offshore Windfarm. ORCPs would be potentially visible in clear conditions but occupying a small extent of the view. They would be seen in the context of an open, panoramic view over the landscape with multiple foci. The North Sea is visible in clear conditions but comprises a relatively small component of the overall scene. The ORCPs would also be theoretically seen in the context of operational baseline offshore windfarms.</p>
North Norfolk				
<p>Viewpoint 7: Wells-next-to-the-Sea Beach</p> <p>Distance to array area: 59.7km</p> <p>Distance to ORCPs: not visible</p>	Medium-high	Negligible	Minor – not significant	<p>WTGs would comprise distant elements, likely to be seen for a small number of days per year. Vertical extent of turbines visible would be limited by curvature of the Earth.</p> <p>A small extent of the WTGs would be positioned behind the operational Race Bank/Triton Knoll and Sheringham Shoal/Dudgeon Offshore Windfarms. However, the proposed WTGs would extend across the gap between these operational offshore windfarms.</p> <p>ORCPs are not predicted to be visible due to the effect of curvature of the Earth. ORCPs</p>

Viewpoint	Sensitivity	Magnitude	Effect and Significance	Rationale
				<u>would be theoretically visible , but this would be limited to ancillary elements on top of the main structure. Given the intervening distance, these are unlikely to be discernible in the view.</u>
Viewpoint 8: Cley Beach Distance to array area: 58km Distance to ORCPs: not visible	Medium-high	Negligible	Minor – not significant	WTGs would comprise distant elements, likely to be seen for a small number of days per year. Vertical extent of turbines visible would be limited by curvature of the Earth. A large proportion of the WTGs would be positioned behind the operational Sheringham Shoal Offshore Windfarm, it would also extend across the gap between Race Bank/Triton Knoll and Sheringham Shoal/Dudgeon Offshore Windfarms. ORCPs are not predicted to be visible due to the effect of curvature of the Earth.
Viewpoint 9: Sheringham Distance to array area: 63.3km Distance to ORCPs: not visible	Medium-high	Negligible	Minor – not significant	WTGs would comprise distant elements, likely to be seen for a small number of days per year. Vertical extent of turbines visible would be limited by curvature of the Earth. A large proportion of the WTGs would be positioned behind the operational Sheringham Shoal and Dudgeon Offshore Windfarm, extending across the gap between these baseline developments. ORCPs are not predicted to be visible due to the effect of curvature of the Earth.
Viewpoint 10: Sheringham Park, Gazebo Distance to	Medium-high	Negligible	Minor – not significant	WTGs would comprise distant elements, likely to be seen for a small number of days per year.

Viewpoint	Sensitivity	Magnitude	Effect and Significance	Rationale
array area: 62.3km 60.5km Distance to ORCPs: 60.5km 57.9km				<p>Vertical extent of turbines visible would be limited by curvature of the Earth.</p> <p>A large proportion of the WTGs would be positioned behind the operational Sheringham Shoal and Dudgeon Offshore Windfarm, extending across the gap between these baseline developments.</p> <p>ORCPs would comprise small elements with visibility restricted by meteorological conditions and curvature of the Earth.</p>
Offshore				
Viewpoint 11: Ferry route corridor (southwest of array area) – Kingston upon Hull to Rotterdam or Zeebrugge Distance to array area: 15.3km Distance to ORCPs: 33.1km 32.6km	Medium/low	Medium/high	Moderate – not significant	<p>WTGs would comprise prominent elements in the middle distance, extending across the horizon to the northeast.</p> <p>They would be seen in the context of operational offshore windfarms, particularly Triton Knoll. Baseline offshore windfarms are located throughout much of the view from this location and the Project would reinforce this pattern.</p> <p>The proposed WTGs would be seen at this proximity for a short duration of the overall journey experienced by ferry passengers.</p> <p>ORCPs would comprise small elements beyond Race Bank Offshore Windfarm, with visibility restricted by meteorological conditions.</p> <p>The effect on visual amenity is considered to be not significant due to the extent of baseline windfarm development and the transitory nature of the view.</p>

Viewpoint	Sensitivity	Magnitude	Effect and Significance	Rationale
<p>Viewpoint 12: Ferry route corridor (northeast of array area) – Newcastle Upon Tyne/North Shields to Amsterdam</p> <p>Distance to array area: 13.3km14.9km</p> <p>Distance to ORCPs: not visible</p>	Medium/low	Medium/high	Moderate – not significant	<p>WTGs would comprise prominent elements in the middle distance, extending across the horizon to the southwest.</p> <p>They would be seen in the context of operational offshore windfarms, although those in the same direction as the array area (Dudgeon, Race Bank and Triton Knoll) are relatively distant, all being located over 50km from this viewpoint. The operational and consented Hornsea Offshore Windfarms are located in the opposing direction, to the northeast.</p> <p>The proposed WTGs would be seen at this proximity for a short duration of the overall journey experienced by ferry passengers. ORCPs are not predicted to be visible due to the effect of curvature of the Earth.</p> <p>The effect on visual amenity is considered to be not significant due to the extent of baseline windfarm development and the transitory nature of the view.</p>

Summary of Potential Effects on Visual Amenity

168. The Project would introduce new man-made elements into the baseline context of open, expansive seaward views and there would be potential for adverse impacts on visual amenity. The analysis undertaken concentrates on the viewpoints selected in relation to the Project. The landscape context for the Project, and the activity the visual receptors are engaged in, means these are frequently of high sensitivity.

169. Visibility of the offshore elements of the Project, in relation to onshore visual receptors, are most likely to be seen from the coastline. However, there is also potential for these elements to be seen as the landform rises in the vicinity of the Lincolnshire Wolds. Key offshore receptors are likely to comprise people travelling on the ferry routes through the study area and to a lesser degree, due to the likely number of potential receptors, recreational vessels.
170. Based on analysis of the locations from which it is expected that the proposed Project is most likely to be seen, the potential effects resulting from the WTGs are predicted to be **not significant**. This is due to a combination of factors including, the intervening distance between the coastline and the array area, together with the associated restrictions to the extent of the WTGs that would be seen due to the effect of curvature of the Earth, and visibility resulting from atmospheric conditions. In addition, the Project is proposed in a seascape beyond an area where there are several baseline OWFs. Therefore, the Project would not be introducing new elements to the landscape or seascape context but would be reinforcing a pattern that has already been established by recent OWF developments and would occur in the backdrop, entirely subsumed behind these operational OWFs – in particular Triton Knoll when viewed from the Lincolnshire coast, and Sheringham Shoal/Dudgeon when viewed from the Norfolk coast.
171. The key elements of the Project that is predicted to result in significant adverse effects on visual amenity are the ORCPs. These would be positioned closer to the coastline than the WTGs, with the closest intervening distance being approximately 12km. These ORCPs have the potential to comprise relatively prominent structures in views from the closest section of the Lincolnshire coast, for example around Chapel Six Marshes. Whilst they would be seen in the context of the baseline offshore developments, they would have a form that contrasts with the existing WTGs. Navigation and lighting have the potential to be visible, including from parts of the coastline. The potential for significant effects to arise relates to the undeveloped sections of this coastline, where they would be seen contrast to the natural character of the landscape. Where the coastline is developed the potential effects are predicted to be moderate and **not significant** as the build context of the viewpoint would reduce the relative chance associated with the ORCPs.
172. The absence of potentially significant effects in relation to the Project beyond the coastline closest to the Project, i.e. from viewpoint 5 Chapel Six Marshes, reinforces the appropriateness of the 30km study area for the ORCPs. Significant adverse effects have not been identified towards the edge of the 30km for the ORCPs (or beyond), and this is in the context of relevant receptors along the coastlines and in the Lincolnshire Wolds being of high sensitivity.

17.7.3 Decommissioning

17.7.3.1 Impact 1: effects of the decommissioning of the ORCPs on seascape and landscape character, landscape designations and visual receptors

173. The effects associated with decommissioning for seascape, landscape and visual receptors would be comparable with those associated with the construction phase. The decommissioning of the offshore elements of the Project has the potential to result in adverse seascape, landscape and visual effects, with these primarily associated with the decommissioning of the ORCPs.
174. Decommissioning phase effects on seascape, landscape and visual receptors will occur are most likely to result from the presence of jack-up vessels and/or dynamic positioning heavy lift vessels, windfarm service vessels and accommodation vessels, all of which may combine to result in adverse effects.
175. The potential effects arising as a result of the construction activities associated with the array area and ORCPs on seascape, landscape and visual receptors are assessed as being of the same magnitude and significance, or less, on all seascape character receptors as those arising due to their operation and maintenance, as described in Section 17.7.2. The size/scale of the changes during this phase would be no greater than the operational phase, and the geographic extent of the change would also be no greater than the operational phase. The decommissioning effects would be short term and temporary, occurring during the length of this phase and differing in nature from the operational effects mainly due the influence of the various construction vessels in the seascape, which would not be present or result in effects during the operational phase. The effects of this phase would also be reversible, with all visible elements removed on completion of decommissioning.

17.8 Cumulative Impact Assessment

17.8.1 Approach

176. Impacts identified in Section 17.7 have the potential for a cumulative effect on receptors. The Cumulative Effects Assessment (CEA) takes account of the impact associated with the Project together with other relevant plans, projects and activities. Cumulative effects are therefore the additional or combined effect of the Project in combination with the effects from a number of different projects, on the same receptor or resource. Refer to Chapter 1, Chapter 5: EIA Methodology for the over-arching approach to the CEA and use of the Planning Inspectorate's advice note seventeen.
177. GLVIA3 (Landscape Institute and IEMA 2013, p121) that *"of greater importance for LVIA are the cumulative landscape and visual effects that may result from an individual project that is being assessed interacting with the effects of other proposed developments in the area"*.

178. NatureScot’s guidance, Assessing the Cumulative Impact of Onshore Wind Energy Developments (NatureScot 2021) is widely used across the UK to inform the specific assessment of the cumulative effects of onshore and offshore windfarms. Both GLVIA3 and NatureScot’s guidance provide the basis for the methodology for the cumulative SLVIA undertaken within this chapter. The NatureScot (2021) guidance identifies that *“The aim of the cumulative assessment is to identify the magnitude of additional cumulative change which would be brought about by the proposed development when considered in conjunction with other windfarms”*..:
179. In line with the Planning Inspectorate, NatureScot guidance and GLVIA3, cumulative effects are assessed in this SLVIA as the additional changes caused by the Project in conjunction with other similar developments (not the totality of the cumulative effect). The CEA assesses the cumulative effect of the Project with other projects (Table 17.3) against the current baseline (Section 17.4), with the assessment of significance apportioning the amount of the effect that is attributable to the Project. The contribution of the Project to the cumulative effect upon the baseline character/view is assessed and information provided on *“how the effects of the applicant’s proposal would combine and interact with the effects of other development”* (the Planning Inspectorate, 2019).
180. Adjacent developments may complement one another, or may be discordant with one another, and it is the contribution of the Project to these cumulative effects that is assessed in the CEA, such as through design discordance or proliferation of multiple developments affecting characteristics, views or new geographic areas. Judgements are made as to whether character changes are likely to occur because of multiple developments becoming a prevailing characteristic of the seascape or view.

17.8.2 Tier Approach to CEA

181. In accordance with the Planning Inspectorate’s advice on CEA (the Planning Inspectorate, 2019), NatureScot guidance (NatureScot, 2021) and GLVIA3 (para 7.13) (Landscape Institute, 2013), existing projects and those which are under construction
182. Table 17.13) are included and described as part of the SLVIA baseline conditions, including the extent to which these have altered character and views, and affected sensitivity to windfarm development. As such, the main assessment set out in Section 17.7 has considered the additional effect of the Project in conjunction with a baseline that includes existing operational and under-construction projects. This includes assessment of the Project against magnitude factors such as its size, scale, spread and landscape context, as well as cumulative effect factors relating to the operational and under-construction windfarms, such as its increase in spread, aesthetic relationship, and contrasts of size and spacing of WTGs of the projects.
183. This CEA sets out a further assessment of the additional cumulative seascape, landscape and visual effects of the Project with other potential future projects.
184. In undertaking this CEA for the Project, it is important to bear in mind that other projects

and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative impact alongside the Project. Therefore, a tiered approach has been adopted in line with advice from the Planning Inspectorate on CEA (the Planning Inspectorate, 2019). This provides a framework for placing relative weight upon the potential for each project/plan to be included in the CEA to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the projects' parameters. The tiered approach that has been utilised within the CEA employs the following tiers (the Planning Inspectorate, 2019):

- Tier 1 assessment – all permitted and submitted applications (including those not yet determined), whether under the Planning Act 2008 or other regimes, but not yet implemented;
- Tier 2 assessment – projects on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted; and
- Tier 3 assessment – projects on the Planning Inspectorate's Programme of Projects where a scoping report has not been submitted; identified in the relevant Development Plan (and emerging Development Plans) recognising that there will be limited information available on the relevant proposals; and identified in other plans and programmes that set the framework for future development consents/approach, where such development is reasonably likely to come forward.

17.8.3 Other Plans, Projects and Activities

185. The second step in the cumulative assessment is the identification of the other plans, projects and activities that may result in cumulative effects for inclusion in the CEA (described as 'project screening').
186. All projects considered for CEA across all topics have been identified within Volume 1, Chapter 5: EIA Methodology (~~Document Reference~~[document reference](#) 6.1.5) which forms an exhaustive list of plans, projects and activities relevant to the Project.
187. Those included in the overall short list for the CEA have then been subject to a screening exercise specific to potential cumulative impacts on seascape, landscape and visual receptors
188. Table 17.13). Each project or plan has been considered on a case-by-case basis for screening in or out of this CEA assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved. Projects screened into the CEA with potential for cumulative impact interactions for seascape, landscape and visual receptors, are mapped in the cumulative study area base plan compiled within the 60km SLVIA study area (Figure 17.21 of Volume 2, (document reference 6.2.17.21)). The specific projects scoped into the CEA for seascape, landscape and visual receptors, are set out in Table 17.13

Table 17.13 Summary of projects considered for the CEA in relation to the SLVIA

Development type	Project	Status	Data confidence assessment /phase	Approach to assessment in ES
Baseline - Operational and under-construction projects that are part of the baseline and considered as part of main SLVIA assessment set out in Section 17.7.				
Offshore Windfarm	Hornsea Project 1	Operational	High	Cumulative effects scoped out of the SLVIA due to its long distance offshore and lack of visibility from the coastline, as agreed with the Planning Inspectorate (The Planning Inspectorate, 2022) (ID 3.11.9).
Offshore Windfarm	Hornsea Project 2	Operational	High	Cumulative effects scoped out of the SLVIA due to its long distance offshore and lack of visibility from the coastline, as agreed with the Planning Inspectorate (The Planning Inspectorate, 2022) (ID 3.11.9).
Offshore Windfarm	Dudgeon	Operational	High	Considered as part of the baseline conditions in assessment of potential effects (Section 17.7) and baseline for CEA in Section 17.8.
Offshore Windfarm	Humber Gateway	Operational	High	
Offshore Windfarm	Inner Dowsing	Operational	High	
Offshore Windfarm	Lincs	Operational	High	
Offshore Windfarm	Lynn	Operational	High	
Offshore Windfarm	Sheringham Shoal	Operational	High	
Offshore Windfarm	Triton Knoll	Operational	High	
Offshore Windfarm	Westermost Rough	Operational	High	
Tier 1 - all permitted and submitted applications, but not yet implemented				
Offshore Windfarm	Hornsea Three	Consented	High	Cumulative effects scoped out of the SLVIA due to its long distance offshore and lack of visibility from the coastline.

Development type	Project	Status	Data confidence assessment /phase	Approach to assessment in ES
Offshore Windfarm	Hornsea Four	Consented	High	Considered as part of the Tier 1 CEA in Section 17.8. Project MDS described further in Tier 1 CEA. Potential for operation and maintenance phase to overlap with the Project's operation and maintenance phase.
Offshore Windfarm	Sheringham Shoal and Dudgeon Extension	Application stage (submitted but not yet determined) Consented	High	Considered as part of the Tier 1 CEA in Section 17.8. Project MDS described further in Tier 1 CEA. Potential for operation and maintenance phase to overlap with the Project's operation and maintenance phase.
Tier 2 - projects on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted				
Electricity Transmission	Eastern Green Link 3 and Eastern Green Link 4	EIA Scoping	High	Considered as part of the Tier 2 CEA in Section 17.8. Project described further in Tier 1 CEA. Potential for construction, operation and maintenance phases to overlap with the Project's construction, operation and maintenance phases.

17.8.4 Cumulative Effects Assessment (CEA)

17.8.4.1 Tier 1

189. The Tier 1 CEA assessment considers all permitted and submitted applications that are not yet implemented within the SLVIA study area, as listed in Table 17.13 and shown in Figure 17.21 of Volume 2 (document reference 6.2.17.21).

190. Whilst Hornsea Four offshore windfarm was not agreed to be scoped out of the SLVIA by the Planning Inspectorate, analysis of this identifies limited potential for cumulative effects. The closest part of the coastline to this consented development is associated with the East Riding of Yorkshire. However, analysis of the wirelines in Figure 17.25b and 17.25c, the closest viewpoint included in the SLVIA, identifies that only blade tips of the proposed offshore turbines would be theoretically visible at a distance of approximately 80km. Therefore, the potential for Hornsea Four offshore windfarm to be seen in conjunction with the Project would be very unlikely to occur from the closest land based parts of the study area. In relation to offshore receptors, Hornsea 4 offshore windfarm would be positioned relatively close to Hornsea Project One and Hornsea Project Two. In this context, the contribution made by the Project in relation to the baseline and consented offshore windfarms would be limited.
191. The key Tier 1 project within the SLVIA study area with potential for cumulative impacts with the Project on seascape, landscape and visual receptors. The Sheringham and Dudgeon Extension Project is subject to a single submitted application that is not yet determined. The Sheringham Extension Project (SEP) and Dudgeon Extension Project (DEP) windfarm sites are 15.8km and 26.5km from the coast for SEP and DEP respectively at their closest point (Figures 17.21 of Volume 2 (document reference 6.2.17.21)). The maximum design scenario for SEP and DEP refers to construction and operation of two OWFs comprising up to 53 offshore turbines in total and a maximum blade tip height of 330m.
192. The key offshore components of SEP and DEP comprise wind turbines, offshore substation platform(s), foundation structures, inter-array cables and export cables to the landfall. SEP and DEP will be connected to shore by offshore export cables installed to the landfall at Weybourne, on the north Norfolk coast. From there, the onshore export cables travel approximately 60km inland to a new high voltage alternating current (HVAC) onshore substation near to the existing Norwich Main substation.
193. The assessment in
194. Table 17.13 has identified that there is potential for the operation and maintenance phase of SEP and DEP to overlap with the Project's operation and maintenance phase, and potential for the construction phases to overlap between 2026 – 2028, leading to potential cumulative impacts on seascape, landscape and visual receptors.
195. The effects identified are considered as being possible to arise only if SEP and DEP receive planning consent and become operational; however it is the case that application stage projects may not ultimately be built in the form that they are submitted, or may not be built at all, introducing some uncertainty that effects assessed in the Tier 1 assessment may not arise in full.
196. The Tier 1 CEA considers the additional cumulative effect of the Project with SEP and DEP, with the assessment of significance apportioning the amount of the effect that is attributable to the Project.

197. The potential for cumulative effects arising in the Tier 1 assessment on views and visual amenity, and perceived effects on seascape and landscape character, is informed by the assessments undertaken in the assessment of potential impacts in Section 17.7. The potential cumulative effects arising with SEP and DEP are of low or negligible magnitude, or localised geographic extent and temporary in nature and therefore have limited potential to interact significantly with changes associated with other projects.
198. The contribution of the Project to the Tier 1 cumulative effect with SEP and DEP on views/visual amenity, seascape and landscape character is described for each broad geographic region within the SLVIA study area with reference to representative viewpoints on these coastlines and the cumulative wireline visualisations presented in Figures 17.25 – 17.36 of Volume 2.

Lincolnshire

199. The potential impacts identified and assessed for the Project alone on receptors in Lincolnshire are of negligible or low magnitude and not significant (as assessed in Section 17.7) for most onshore receptors, increasing to medium-low or medium from the viewpoints from a limited area of coastline closest to the ORCPs.
200. The potential cumulative effects arising with SEP and DEP are limited. This is primarily due to the distance of the Project off the Lincolnshire coast (over 54km), the visible vertical extent of its turbines being limited by curvature of the Earth, likely to be seen for a small number of days per year (see Table 17.7 and the associated analysis) and its position in the background to existing operational Triton Knoll Offshore Windfarm, behind which the Project will be almost entirely subsumed.
201. The cumulative ZTV for SEP in Figure 17.23 of Volume 2, (document reference 6.2.17.23) and DEP in Figure 17.24 of Volume 2, (document reference 6.2.17.24) shows the potential geographic extent of combined theoretical visibility of the Project with SEP and DEP. Although this appears to show potential for a wide zone of combined visibility, the intervening distance limits the potential for cumulative changes arising from DEP and SEP, which will be located approximately 47km (SEP) and 57km (DEP), from the closest part of the Lincolnshire coast, behind operational windfarms (Inner Dowsing, Lincs, Lynn and Race Bank) and DEP and SEP will result in a negligible (project alone) magnitude of change to views from the Lincolnshire coast. No significant effects are identified in the SLVIA for SEP and DEP (Equinor, 2022 - Volume 1, Chapter 25).

202. SEP and DEP are shown in the wireline visualisations from Lincolnshire in Viewpoints 2 – 6 (Figures 7.26 to Figure 7.30 of Volume 22 (document references 6.2.17.26 to 6.2.30)). The cumulative wirelines from these viewpoints illustrate that there would be potential for the Project to be visible in combination with SEP and DEP from the southern part of the SLVIA study area, from the closest parts of the Lincolnshire coastline, located in the wide easterly offshore views. Both the Project (54km), SEP (47km) and DEP (57km) will form visually recessive distant elements subsumed behind either the operational Triton Knoll or Inner Dowsing, Lynn, Lincs and Race Bank offshore windfarms. The Project, SEP and DEP will appear distant and recessive, introducing elements that are substantially characteristic in the receiving views with a similar form and which will appear notably smaller in apparent scale due to their longer distance from viewpoints and will frequently not be visible in the prevailing weather conditions.
203. The contribution of the Project to the cumulative effect with DEP and SEP on views and visual amenity experienced from the Lincolnshire coastline within the SLVIA study area is assessed as being of low to negligible magnitude. Consequently, even for receptors of high sensitivity at the coast or within AONBs, its resulting contribution to the cumulative effect on views and perceived character of the seascape/landscape is assessed as being not significant (moderate/minor), reducing further for receptors of lower sensitivity to change and at greater distance moving away from the closest sections of the Lincolnshire coastline.

North Norfolk

204. The potential impacts identified and assessed for the Project alone on receptors in North Norfolk are of negligible magnitude and not significant (as assessed in Section 17.7) for all seascape, landscape and visual receptors. It is considered that these potential impacts of the offshore elements of the Project have limited potential to interact with changes associated with SEP and DEP on onshore seascape, landscape and visual receptors.
205. The potential cumulative effects arising with SEP and DEP are limited. This is primarily due to the distance of the Project off the North Norfolk coast (over 54km), the visible vertical extent of its turbines being limited by curvature of the Earth, likely to be seen for a small number of days per year (see Table 17.7 and the associated analysis) and its position in the background to the existing operational Sheringham Shoal, Dudgeon and Race Bank Offshore Windfarms, behind which the Project will be almost entirely subsumed.

206. The cumulative ZTV for SEP in Figure 17.23 of Volume 2, (document reference 6.2.17.23) and DEP in Figure 17.24 of Volume 2, (document reference 6.2.17.24) shows the potential geographic extent of combined theoretical visibility of the Project with SEP and DEP. SEP and DEP are located at closer range to the North Norfolk coast, approximately 15.8km and 26.5km respectively, such that they have the potential to result in a medium-large (project alone) magnitude of change to views from the closest parts of the North Norfolk coast (as identified in the SLVIA for SEP and DEP) (Equinor, 2022 - Volume 1, Chapter 25). The potential for cumulative changes arising from the Project is however limited by its long distance off the North Norfolk coast (approximately 57 km) and its position subsumed behind DEP and SEP, and the operational Sheringham Shoal, Dudgeon and Race Bank offshore windfarms.
207. SEP and DEP are shown in the wireline visualisations from Norfolk in Viewpoints 7 – 10 (Figures 7.31 to Figure 7.34 of Volume 2). The cumulative wirelines from these viewpoints illustrate that there would be potential for the Project to be visible in combination with SEP and DEP from the North Norfolk coast of the SLVIA study area, however the Project (57km) will form visually recessive distant elements subsumed behind SEP, DEP and the operational offshore windfarms, small in apparent scale and frequently not be visible in the prevailing weather conditions.
208. The contribution of the Project to the cumulative effect with DEP and SEP on views and visual amenity experienced from the North Norfolk coastline within the SLVIA study area is assessed as being of negligible magnitude. Consequently, even for receptors of high sensitivity at the coast or within AONBs, its resulting contribution to the cumulative effect on views and perceived character of the seascape/landscape is assessed as being not significant (minor), reducing further for receptors of lower sensitivity to change and at greater distance moving away from the closest sections of the North Norfolk coastline. It is also predicted that there would not be a significant cumulative effect on the special qualities or characteristics of the Norfolk Coast AONB.

17.8.4.2 Tier 2

209. The Tier 2 CEA assessment considers all EIA scoping stage applications that are not yet submitted as part of a planning application or Development Consent Order Application within the SLVIA study area, as listed in Table 17.13. National Grid's proposed Eastern Green Link 3 and Eastern Green Link 4 project has the potential to result in cumulative seascape, landscape and visual effects with the offshore elements of the Project. The proposed Eastern Green Link 3 and Eastern Green Link 4 project is not shown on Figure 17.21 of Volume 2 (document reference 6.2.17.21) as this proposed development is at a relatively early stage where there could be notable changes to, or refinement of, the project components prior to submission of the application document. In addition, key elements of this development within the SLVIA study area for the Project would be subsea or buried.

210. The planned construction timeframe for the proposed Eastern Green Link 3 and Eastern Green Link 4 development is between 2028 and 2034. Therefore, there is potential for overlap between the construction phase for the proposed development and the Project. The key potential interaction between the proposed development and the Project is the cable installation at the landfall. However, the duration of these works and the potential for similar works to be taking place simultaneously will be limited. The installation of the buried onshore cable would be inland of the coastline, where the predicted seascape, landscape and visual effects of the Project are predicted to be limited and not significant.

211. Eastern Green Link 3 is expected to include a converter station in the Walpole area of Norfolk, which is outside the SLVIA study area for the Project. Eastern Green Link 4 is also expected to include a converter station in the Walpole area of Norfolk (again outside the SLVIA study area for the Project), together with a direct current switching station and a converter station within East Lindsey, both of which may be within the SLVIA study area for the Project. At present, there is limited information on the locations of the direct current switching station and converter station within East Lindsey. Therefore, it is not possible to make specific assessment judgements in relation to potential cumulative effects. However, given it is predicted that the offshore elements of the Project would be limited away from the coastline, it is predicted that there would be limited potential for cumulative seascape, landscape and visual effects with the proposed structures that may form part of Eastern Green Link 4.

17.9 Inter-Relationships

~~209.~~212. There are clear inter-relationships between the seascape, landscape and visual assessment and several other topics, that have been considered within this ES. Table 17.14 sets out the inter-relationships between this chapter and the other chapters within the ES and signposts to where those issues have been addressed in the relevant chapters.

Table 17.14 Potential inter-relationships between the SLVIA and other chapters within the ES

Topic/Chapter	Where Addressed in the SLVIA	Rationale
Volume 1, Chapter 28: Landscape and Visual Impact Assessment	Section 17.7	Both chapters consider the potential effects of the Project on landscape and visual receptors. Volume 1, Chapter 28: Landscape and Visual Assessment (Document Reference document reference 6.1.28) considers the effects of the onshore elements of the Project on these receptors whilst this SLVIA chapter considers the effects of the offshore elements of the Project.
Volume 1, Chapter 20: Onshore Archaeology and Cultural Heritage	Section 17.7	The visualisations and figures associated with the SLVIA (Figures 17.25 to 17.36 of Volume 2) are also used to support the assessment in Volume 1, Chapter

Topic/Chapter	Where Addressed in the SLVIA	Rationale
		20: Onshore Archaeology and Cultural Heritage (Document Reference document reference 6.1.20). Both chapters consider the potential effects of the visibility of offshore elements of the Project on onshore landscape and visual receptors. The SLVIA considers this in terms of the effects on visual amenity and landscape character whilst Volume 1, Chapter 20: Onshore Archaeology and Cultural Heritage (Document Reference document reference 6.1.20) considers visibility of the offshore elements of the Project in relation to the settings of the cultural heritage assets. Registered Historic Parks and Gardens are referenced in the SLVIA where they are relevant to the value or view. The impact on these receptors is assessed in Chapter 20 (Document Reference document reference 6.1.20).
Volume 1, Chapter 29: Socio-Economic Characteristics	Section 17.7	The visualisations and figures associated with the SLVIA (Figure 17.25 to 17.36 of Volume 2,) are also used to support the assessment in Volume 1, Chapter 29: Socio-Economic Characteristics (Document Reference document reference 6.1.29). Both chapters consider the potential effects of the offshore elements of the Project on the visual amenity of recreational users in the local area.

~~210.~~[213.](#) The inter-relationship between the SLVIA effects of the offshore elements of the Project and the landscape and visual effects of the onshore elements of the Project occurs where landscape and visual receptors may be materially impacted through visibility of both parts of the Project.

~~211.~~[214.](#) The offshore elements of the Project only affect landscape receptors through visibility as part of the setting which may affect landscape character, however the onshore elements of the Project also affect the landscape physically, which in turn may affect landscape character.

~~212.~~[215.](#) The landscape character and visual effects of the onshore elements of the Project are relatively localised whilst the effects of the offshore elements of the Project are more widespread. The areas where there is a strong interrelationship between these effects occurs only where they coincide to affect the same receptors.

17.10 Transboundary Effects

~~213.~~216. A description of how potential transboundary effects will be assessed is outlined in Volume 1, Chapter 5: EIA Methodology. The SLVIA study area is located entirely outside the European Union (EU) territorial waters and the coastline of the Netherlands, Belgium and France are all located over 200km from the array area.

~~214.~~217. Due to the long distance of these respective coastlines, the position of EU territorial waters outside the SLVIA study area and the concentrated nature of any potential impacts on the seascape, landscape and visual resource to the UK coastline within the SLVIA study area, transboundary impacts will not occur on seascape, landscape or visual receptors and therefore transboundary impacts have been scoped out from further consideration within the SLVIA.

~~215.~~218. The Scoping Report proposed to scope this matter out of further assessment on the grounds that there are unlikely to be any transboundary effects because of the distance between the Project and the boundaries of European Economic Area (EEA) States. The Planning Inspectorate agreed that effects on an EEA State are unlikely, and this matter could be scoped out of further assessment.

17.11 Conclusions

~~216.~~219. The SLVIA chapter of the ES identifies and assesses the potential significance of changes resulting from the construction, operation and decommissioning of the offshore elements of the Project within the array area and the Offshore ECC. This is carried out in relation to both the seascape character and landscape character as environmental resources in their own right, and on peoples' views and visual amenity.

~~217.~~ Aspects of the Project have been scoped out of the SLVIA, as set out in

~~218. Table 17.2.~~ Table 17.12. These include the construction and decommissioning of structures within the array area, the construction, operation and decommissioning of the Offshore ECC and the effects of aviation and navigation lighting within the array area.

~~219.220.~~ Table 17.15 provides an overview of the potential effects of the offshore elements of the Project.

Table 17.15 Summary of potential seascape, landscape and visual effects

Description of effect	Effect	Additional mitigation measures	Residual impact
Construction			
Impact 1: effects of the construction of the ORCPs on seascape and landscape character, landscape designations and visual receptors	Changes to the perception of seascape/landscape character, landscape designations and visual amenity.	Not Applicable – no additional mitigation identified	Predicted moderate effects on the Donna Nook to Gibraltar Point Naturalistic Coast LCA. However, on balance these are not considered to be significant. More limited and not significant effects identified in relation to other LCAs and designations. Predicted significant effects identified in relation to visual receptors on the closest parts of undeveloped sections of the coastline, as reflected by Viewpoint 5 at Chapel Six Marshes.
Operation and Maintenance			
Impact 1: effects of the array area on seascape and landscape character, landscape designations and visual receptors	Changes to the perception of seascape/landscape character, landscape designations and visual amenity.	Not Applicable – no additional mitigation identified	No significant effects identified in relation to offshore elements of the Project in the array area, due to a combination of distance, curvature of the earth, presence of baseline windfarm development and, in the context of ferry passengers, the duration the WTGs are likely to be prominent elements.
Impact 2: effects of the ORCPs on seascape and landscape character, landscape designations and visual receptors	Changes to the perception of seascape/landscape character, landscape designations and visual amenity.	Not Applicable – no additional mitigation identified	Predicted moderate effects on the Donna Nook to Gibraltar Point Naturalistic Coast LCA. However, on balance these are not considered to be significant.

Description of effect	Effect	Additional mitigation measures	Residual impact
			More limited and not significant effects identified in relation to other LCAs and designations. Predicted significant effects identified in relation to visual receptors on the closest parts of undeveloped sections of the coastline, as reflected by Viewpoint 5 at Chapel Six Marshes.

Decommissioning

Impact 1: effects of the decommissioning of the ORCPs on seascape and landscape character, landscape designations and visual receptors	Changes to the perception of seascape/landscape character, landscape designations and visual amenity.	Not Applicable – no additional mitigation identified	Predicted moderate effects on the Donna Nook to Gibraltar Point Naturalistic Coast LCA. However, on balance these are not considered to be significant. More limited and not significant effects identified in relation to other LCAs and designations. Predicted significant effects identified in relation to visual receptors on the closest parts of undeveloped sections of the coastline, as reflected by Viewpoint 5 at Chapel Six Marshes.
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Cumulative

Potential cumulative effects are considered based on the introduction of the Project in the context of the baseline operational and consented OWFs

~~220.~~221. In overall terms the potential effects of the offshore elements of the Project the potential for significant effects to occur in relation to seascape, landscape and visual receptors would be limited. These significant effects relate to the ORCPs due to their relative proximity to parts of the Lincolnshire coastline and are associated with the closest onshore landscape and visual receptors to the ORCPs.

~~221.~~222. In relation to landscape receptors, the key consideration is potential Donna Nook to Gibraltar Point Naturalistic Coast LCA. This comprises a narrow strip of land along the majority of the Lincolnshire coastline. Whilst the ORCPs would be relatively prominent from part of this LCA, this prominence would be particularly applicable to a short section closest to the ORCPs. However, this LCA is already influenced by development in many locations due to a combination of the local settlement pattern and tourism related development, together with existing offshore windfarms. The ORCPs would add to this existing pattern of development, but the

baseline context would limit the relative change in relation to the LCA overall. The more remote section of this LCA is along the north eastern part of the Lincolnshire coastline, where the ORCPs would be more distant and, as consequence, their relative prominence would be reduced.

~~222.~~223. In relation to visual receptors significant effects have been identified in relation to visual receptors on the closest parts of undeveloped sections of the coastline, as reflected by Viewpoint 5 at Chapel Six Marshes. In such locations the introduction of the ORCPs would contrast with the character of the coastline. However, such effects have only been identified at the closest section of the coastline to the ORCPs. At other viewpoints along the coastline the effects would reduce to a combination of the intervening distance and or the context of the baseline built environment, where the viewpoint is located within a settlement.

~~223.~~224. There are nationally designated landscapes within the SLVIA study area for the Project: the Lincolnshire Wolds AONB and Norfolk Coast AONB. However, it is assessed that the effects on landscape and visual receptors within these designated landscapes would not be significant, as a result of the Project. Therefore, it is considered that the Project would not adversely affect the defined special qualities or statutory purposes of the Lincolnshire Wolds AONB or Norfolk Coast AONB designations.

~~224.~~225. As referred to in Section 17.3 comments have been received from Natural England in April 2023 in relation to the SLVIA scope. These comments set out that Natural England agree that potential effects resulting from elements of the Project in the array area are likely to result in limited effects on landscape and visual receptors, including the designated/defined landscape at Spurn Head and the Norfolk Coast AONB.

17.12 References

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