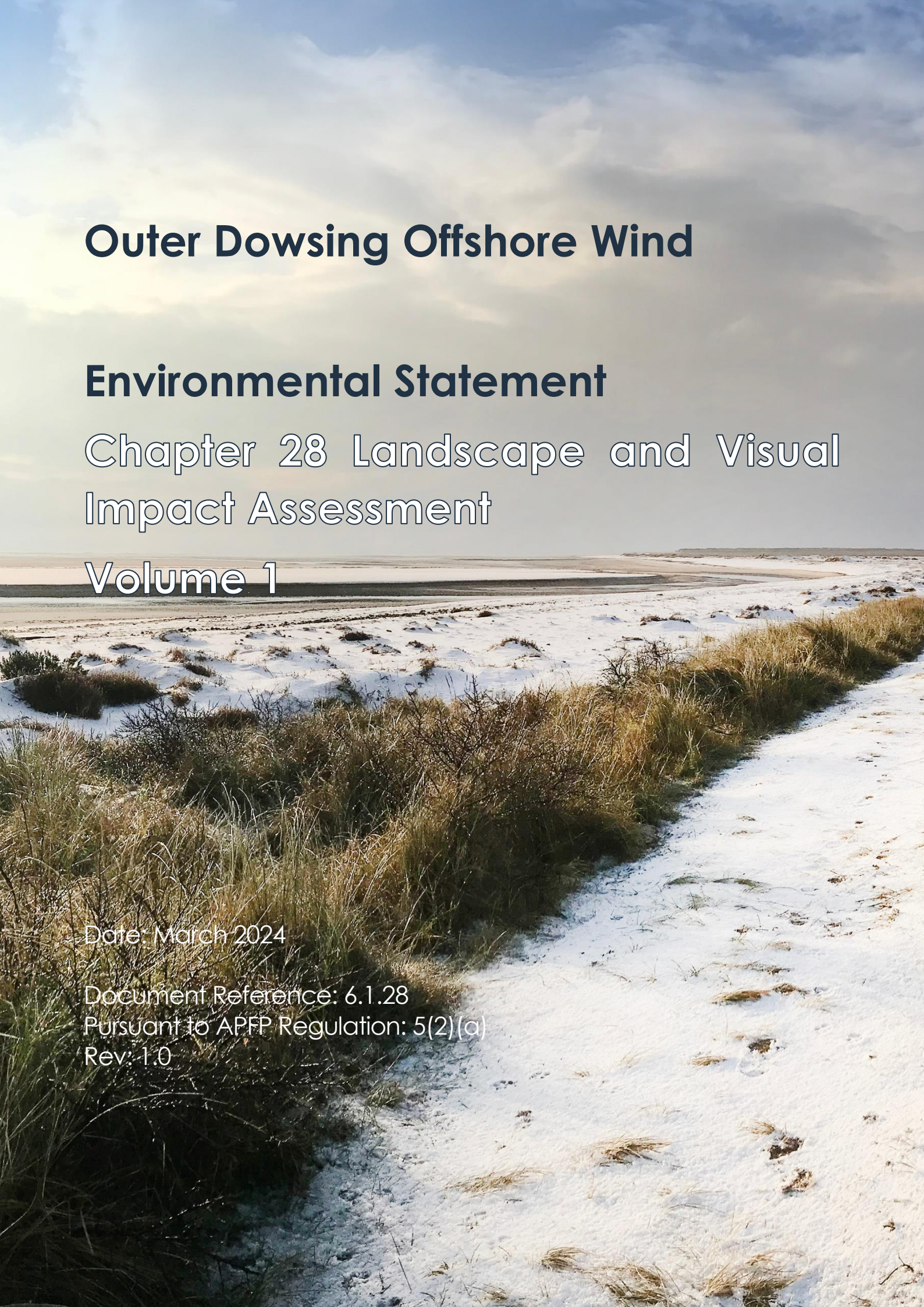

Outer Dowsing Offshore Wind

Environmental Statement

Chapter 28 Landscape and Visual Impact Assessment

Volume 1

Date: March 2024

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Acronyms & Definitions

Abbreviations / Acronyms

Abbreviation / Acronym	Description
AIS	Air Insulated Switchgear
AONB	Area of Outstanding Natural Beauty
BBC	Boston Borough Council
CIC	Cable Installation Compound
DAD	Design Approach Document
DCO	Development Consent Order
DECC	Department of Energy & Climate Change, now the Department for Energy Security and Net Zero (DESNZ)
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)
DPS	Design Principles Statement
DLUHC	Department for Levelling Up, Housing and Communities
ECC	Export Cable Corridor (offshore ECC or onshore ECC)
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Group
GIS	Gas Insulated Switchgear (substation technology)
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
HDD	Horizontal Directional Drilling
IEMA	Institute of Environmental Management and Assessment
LAT	Lowest Astronomical Tide
LCA	Landscape Character Areas
LCC	Lincolnshire County Council
LLCA	Local Landscape Character Area
LPA	Local Planning Authority
LVIA	Landscape and Visual Impact Assessment
MDE	Maximum Design Envelope
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
NCA	National Character Areas
NGSS	National Grid Substation
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
NPS	National Policy Statement

Abbreviation / Acronym	Description
NSIP	Nationally Significant Infrastructure Project
ODOW	Outer Dowsing Offshore Wind, trading name of GT R4 Limited
OLEMS	Outline Landscape and Ecological Management Strategy
OnSS	Onshore Substation
OPEN	Optimised Environments
ORCP	Offshore Reactive Compensation Platform
OS	Ordnance Survey
PDE	Project Design Envelope
PEIR	Preliminary Environmental Impact Report
RPG	Registered Park and Garden
SLVIA	Seascape, Landscape and Visual Impact Assessment
TCC	Temporary Construction Compound
TJB	Transition Joint Bay
WTG	Wind Turbine Generator
ZTV	Zone of Theoretical Visibility

Terminology

Term	Definition
400kV cables	High-voltage cables linking the OnSS to the NGSS.
400kV cable corridor	The 400kV cable corridor is the area within which the 400kV cables connecting the onshore substation to the NGSS will be situated.
The Applicant	GT R4 Ltd. The Applicant making the application for a DCO. The Applicant is GT R4 Limited (a joint venture between Corio Generation, 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.
Array area	The area offshore within the Order Limits within which the generating stations (including Wind Turbine Generators (WTG) and inter array cables), offshore accommodation platforms, offshore transformer substations and associated cabling are positioned.
Baseline	The status of the environment at the time of assessment without the development in place.
Cable Circuit	A number of electrical conductors necessary to transmit electricity between two points bundled as one cable or taking the form of separate cables, and may include one or more auxiliary cables (normally fibre optic cables).
Cable Ducts	A duct is a length of underground piping which is used to house the Cable Circuits.
Connection Area	An indicative search area for the NGSS.

Term	Definition
Cumulative effects	The combined effect of the Project acting cumulatively with the effects of a number of different projects, 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.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of an impact with the sensitivity of a receptor, in accordance with defined significance criteria.
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the Environmental Impact Assessment (EIA) Regulations, including the publication of an Environmental Statement (ES).
EIA Regulations	Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
Environmental Statement (ES)	The suite of documents that detail the processes and results of the Environmental Impact Assessment (EIA).
Evidence Plan	A voluntary process of stakeholder consultation with appropriate Expert Topic Groups (ETGs) that discusses and, where possible, agrees the detailed approach to the Environmental Impact Assessment (EIA) and information to support Habitats Regulations Assessment (HRA) for those relevant topics included in the process, undertaken during the pre-application period.
Export Cables	High voltage cables which transmit power from the Offshore Substations (OSS) to the Onshore Substation (OnSS) via the Offshore Reactive Compensation Platform (ORCP) if required, which may include one or more auxiliary cables (normally fibre optic cables).
Grid Connection Cable	Cable which connects the project Onshore Substation (OnSS) with the National Grid Substation.
Haul Road	The track within the onshore ECC and 400kV cable corridor which the construction traffic would use to facilitate construction.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Indicative Working Width	The indicative working width within the onshore Export Cable Corridor (ECC), required for the construction of the onshore cable route.
Intertidal	The area between Mean High Water Springs (MHWS) and Mean Low Water Springs (MLWS).
Joint bays	An excavation formed with a buried concrete slab at sufficient depth to enable the jointing of high voltage power cables.

Term	Definition
Landfall	The location at the land-sea interface where the offshore export cable will come ashore.
Link Boxes	Underground metal chamber placed within a plastic and/or concrete pit where the metal sheaths between adjacent export cable sections are connected and earthed.
Maximum Design Scenario	The maximum design parameters of the combined project assets that result in the greatest potential for change in relation to each impact assessed.
Mitigation	Mitigation measures, or commitments, are commitments made by the Project to reduce and/or eliminate the potential for significant effects to arise as a result of the Project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.
National Grid Onshore Substation (NGSS)	The National Grid substation and associated enabling works to be developed by the National Grid Electricity Transmission (NGET) into which the Project's 400kV Cables would connect.
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.
Non-statutory consultee	Organisations that the Applicant may be required to (under Section 42 of the 2008 Act) or may otherwise choose to engage during the pre-application phases (if, for example, there are planning policy reasons to do so) who are not designated in law but are likely to have an interest in a proposed development.
Outer Dowsing Offshore Wind (ODOW)	The Project
Onshore Export Cable Corridor (ECC)	The Onshore Export Cable Corridor (Onshore ECC) is the area within which the export cable running from the landfall to the onshore substation (OnSS) will be situated.
Onshore Infrastructure	The combined name for all onshore infrastructure associated with the Project from landfall to grid connection.
Onshore Substation (OnSS)	The Project's onshore HVAC substation, containing electrical equipment, control buildings, lightning protection masts, communications masts, access, fencing and other associated equipment, structures or buildings; to enable connection to the National Grid.
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.
The Planning Inspectorate	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).

Term	Definition
Pre-construction and Post-construction	The phases of the Project before and after construction takes place.
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.
The Project	Outer Dowsing Offshore Wind, an offshore wind generating station together with associated onshore and offshore infrastructure.
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.
Project Design Envelope	A description of the range of possible elements that make up the Project's design options under consideration, as set out in detail in the project description. This envelope is used to define the Project for Environmental Impact Assessment (EIA) purposes when the exact engineering parameters are not yet known. This is also often referred to as the "Rochdale Envelope" approach.
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.
Statement of Common Ground	A statement of common ground is a written statement produced jointly between The Applicant and another Interested Party setting out the areas of agreement and /or disagreement between parties.
Statutory consultee	Organisations that are required to be consulted by the Applicant, the Local Planning Authorities and/or The Inspectorate during the pre-application and/or examination phases, and who also have a statutory responsibility in some form that may be relevant to the Project and the DCO application. This includes those bodies and interests prescribed under Section 42 of the Planning Act 2008.
Study area	Area(s) within which environmental impact may occur – to be defined on a receptor-by-receptor basis by the relevant technical specialist.
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).
Transition Joint Bay (TJBs)	The offshore and onshore cable circuits are jointed on the landward side of the sea defences/beach in a Transition Joint Bay (TJB). The TJB is an underground chamber constructed of reinforced concrete which provides a secure and stable environment for the cable.
Trenched technique	Trenching is a construction excavation technique that involves digging a narrow trench in the ground for the installation, maintenance, or inspection of pipelines, conduits, or cables.

Term	Definition
Trenchless technique	Trenchless technology is an underground construction method of installing, repairing and renewing underground pipes, ducts and cables using techniques which minimize or eliminate the need for excavation. Trenchless technologies involve methods of new pipe installation with minimum surface and environmental disruptions. These techniques may include Horizontal Directional Drilling (HDD), thrust boring, auger boring, and pipe ramming, which allow ducts to be installed under an obstruction without breaking open the ground and digging a trench.
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
6.1.3	Project Description
6.1.4	Site Selection and Alternatives
6.1.5	EIA Methodology
6.1.17	Seascape, Landscape and Visual Impact Assessment
6.1.20	Onshore Archaeology and Cultural Heritage
6.1.21	Onshore Ecology Chapter
6.1.22	Onshore Ornithology
6.2.28	Landscape and Visual Impact Assessment Figures
8.10	Outline Landscape and Ecological Strategy (OLEMS)
8.18	Design Approach Document
8.19	Design Principles Statement

1 Introduction

1. This chapter of the Environmental Statement (ES) presents the results to date of the Environmental Impact Assessment (EIA) process for the potential impacts of Outer Dowsing Offshore Wind ("the Project") on landscape and visual receptors. Specifically, this Chapter considers the potential impact of the Project from the mean low water spring (MLWS) landfall, along the Onshore Export Cable Corridor (ECC), and incorporating the Onshore Substation (OnSS) during the construction, operation and maintenance, and decommissioning phases.
2. GT R4 Ltd (trading as Outer Dowsing Offshore Wind), hereafter referred to as the 'Applicant', is proposing to develop the Project. The Project will include both offshore and onshore infrastructure including an offshore generating station (windfarm) located approximately 54 km from the Lincolnshire coastline, export cables to landfall, onshore cables, an onshore substation, connection to the electricity transmission network, and ancillary and associated development (see Volume 1, Chapter 3: Project Description 6.1.3 for full details).
3. The key onshore elements of the Project include the Onshore Substation (OnSS), the Onshore Export Cable Corridor (onshore ECC), the 400kV cable corridor and the landfall. The Landscape and Visual Impact Assessment (LVIA) assesses the potential effect of the Project on the physical landscape, landscape character and visual amenity, as well as the cumulative effects with other relevant existing and proposed developments.
4. The LVIA has been undertaken by Chartered Landscape Architects at Optimised Environments (OPEN), in accordance with the LVIA's Assessment Methodology set out in section 6.
5. This chapter should be read alongside the following chapters, presented in Volume 1 of Part 6 the Environmental Statement, and Outline Documents, presented in Part 8 of the DCO Application:
    - Part 6 Environmental Statement
        - Volume 1, Chapter 3: Project Description (document reference 6.1.3);
        - Volume 1, Chapter 4: Site Selection and Consideration of Alternatives (document reference 6.1.4);
        - Volume 1, Chapter 5: Environmental Impact Assessment Methodology (document reference 6.1.5);
        - Volume 1, Chapter 17: Seascape, Landscape and Visual (document reference 6.1.17);
        - Volume 1, Chapter 20: Onshore Archaeology and Cultural Heritage (document reference 6.1.20);
        - Volume 1, Chapter 21: Onshore Ecology (document reference 6.1.21);
        - Volume 1, Chapter 22: Onshore Ornithology (document reference 6.1.22);

- Part 8 Outline Documents
    - 8.10 Outline Landscape and Ecology Management Strategy (document reference 8.10);
    - 8.18 Design Approach Document (document reference 8.18); and
    - 8.19 Design Principles Statement (document reference 8.19).

6. This LVIA is supported by plan graphics and visual representations within Volume 2, Chapter 28: Landscape and Visual Assessment Figures (document reference 6.2.28). LVIA figures include maps of the onshore infrastructure, cumulative developments, landscape and visual receptors, Zone of Theoretical Visibility (ZTV) maps, indicative landscape mitigation, and visual representations, including baseline panorama views and photomontages.

2 Statutory and Policy Context

7. This section includes a summary of national and local policy of particular relevance to the assessment of the landscape and visual effects that have been considered in this chapter.
8. The relevant legislation and planning policy for offshore renewable energy Nationally Significant Infrastructure Projects (NSIPs), specifically in relation to landscape and visual assessment, is outlined below in Table 2.1.
9. The National Policy Statements (NPSs) provide the main policy tests in relation to the Project. In 2023 the NPSs have been revised, draft versions published for consultation and final versions recently published. These revised NPSs have now taken effect and are reviewed in Table 2.1 . This includes the Overarching NPS EN-1 (Department for Energy Security and Net Zero (DESNZ), 2023), NPS EN-3 (DESNZ, 2023) and NPS EN-5 (DESNZ, 2023), as well as the updated National Planning Policy Framework (Department for Levelling Up, Housing and Communities (DLUHC), 2023).

Table 2.1: Legislation and Policy Context

Legislation /policy	Key provisions	Section where legislation or policy is addressed
Overarching National Policy Statement for Energy (NPS EN-1) (DESNZ, 2023)	Paragraph 4.3.11 advises that *'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.'* At paragraph 4.3.12 it is stated that, where this is the case, '*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*.'	Chapter 3 (document reference 6.1.3) sets out the details of the project and which areas are and are not settled in precise detail. Section 5 sets out the maximum design parameters that have been defined to ensure that the worst case landscape and visual effects are assessed. The Outline Landscape and Ecological Management Strategy (OLEMS) (document reference 8.10) sets out the design principles for landscape mitigation and includes indicative mitigation planting for the OnSS.
NPS EN-1 (2023)	In relation to the topic of *'Criteria for Good Design for Energy Infrastructure'*, Paragraph 4.7.1 advises that *'The visual appearance of a building, structure, or piece of infrastructure, and how it relates to the landscape it sits within, is*	ES Chapter 3 (document reference 6.1.3), sets out how the Project responds to this criterion. The Project's approach to good design is set out in the Design Approach Document (document reference

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	sometimes considered to be the most important factor in good design. But high quality and inclusive design goes far beyond aesthetic considerations. The functionality of an object - be it a building or other type of infrastructure - including fitness for purpose and sustainability, is equally important.' Paragraph 4.7.2 advises that '*Applying "good design" to energy projects should produce sustainable infrastructure sensitive to place, including impacts on heritage, efficient in the use of natural resources, including land use, and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. It is acknowledged, however that the nature of energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area.*'	8.18) and the design principles are outlined in the Design Principles Statement (document reference 8.19). The OLEMS (document reference 8.10) sets out the design principles for landscape mitigation and includes indicative mitigation planting for the OnSS.
NPS EN-1 (2023)	At paragraph 4.7.5 the concept of design champions is introduced in the following statement; '*To ensure good design is embedded within the project development, a project board level design champion could be appointed, and a representative design panel used to maximise the value provided by the infrastructure. Design principles should be established from the outset of the project to guide the development from conception to operation.*'	The Project's approach to good design is set out in the Design Approach Document (document reference 8.18) where it outlines the appointment of David Few in the role of Design Champion for the Project. David Few is the Project Director for the Project and has a wealth of experience in engineering and implementation of "good design". The design principles are outlined in the Design Principles Statement (document reference 8.19). The final design will accord with the DPS and will be subject to approval by the Local Planning Authority (in consultation with Lincolnshire County Council) in accordance with the relevant DCO Requirement,

Legislation /policy	Key provisions	Section where legislation or policy is addressed
		prior to the commencement of construction.
NPS EN-1 (2023)	In relation to Good Design paragraph 4.7.6 advises that '*Whilst the applicant may not have any or very limited choice in the physical appearance of some energy infrastructure, there may be opportunities for the applicant to demonstrate good design in terms of siting relative to existing landscape character, land form and vegetation. Furthermore, the design and sensitive use of materials in any associated development such as electricity substations will assist in ensuring that such development contributes to the quality of the area. Applicants should also, so far as is possible, seek to embed opportunities for nature inclusive design within the design process.*'	Chapter 3 (document reference 6.1.3), sets out how the Project has considered and balanced these criteria. The Project's approach to good design is set out in the Design Approach Document (document reference 8.18) and the design principles are outlined in the Design Principles Statement (document reference 8.19). Section 5 of this chapter sets out the embedded mitigation that is included for the Project and provision for biodiversity and ecological networks is outlined in the OLEMS (document reference 8.10).
NPS EN-1 (2023)	Paragraph 4.7.7 sets out that the applicants must demonstrate how the design process was conducted and how the design evolved and design decisions were made. This is in order for the Secretary of State (SoS) to consider the application. In doing so the SoS, as stated at Paragraph 4.7.12 *'should take into account the ultimate purpose of the infrastructure and bear in mind the operational, safety and security requirements which the design has to satisfy. Many of the wider impacts of a development, such as landscape and environmental impacts, will be important factors in the design process.'* At Paragraph 4.7.13, it is also noted that '*Assessment of impacts must be for the stated design life of the scheme rather than a shorter time period.*'	The evolution of the design is set out in Chapter 4 (document reference 6.1.4), and Chapter 3 (document reference 6.1.3). The Project's approach to good design is set out in the Design Approach Document (document reference 8.18) and the design principles are outlined in the Design Principles Statement (document reference 8.19). How the design has evolved in relation to landscape impacts is included in section 5 of this Chapter. The duration of LVIA effects is explained in section 6.
NPS EN-1 (2023)	Paragraph 5.10.1 notes that landscape and visual effects will *vary according to*	The varied nature of landscape and visual receptors is explained

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	'the type of development, its location and the landscape setting of the proposed development' and that *'references to landscape should be taken as covering seascape and townscape where appropriate.'*	in section 4. Chapter 17: SLVIA (document reference 6.1.17) assesses the effects of the offshore elements of the Project on seascape, landscape and visual receptors.
NPS EN-1 (2023)	Paragraph 5.10.6 advises that '*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.'*	Chapter 4 (document reference 6.1.4) sets out the iterative process that has influenced the design of the Project. The mitigation of landscape effects set out in section 5 has been considered in the LVIA, to minimise "*harm to the landscape*" where possible.
NPS EN-1 (2023)	Paragraph 5.10.12 advises – '*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 LVIA, as set out in sections 7.2 and 7.3.
NPS EN-1 (2023)	Paragraph 5.10.15 states '*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 visual effects resulting from the onshore elements of the Project during construction and operation are assessed in the LVIA in section 7.3. Chapter 17: SLVIA (document reference 6.1.17) assesses the effects of the offshore elements of the Project on seascape, landscape and visual receptors, including coastal areas.
NPS EN-1 (2023)	Paragraph 5.10.16 sets out the need to carry out a landscape and visual impact assessment, including a cumulative assessment in accordance with published	Reference documents and guidance, relevant to the LVIA, are set out in section 6. The

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	guides. Relevant guides are listed as The Landscape Institute and Institute of Environmental Management and Assessment: Guidelines for Landscape and Visual Impact Assessment (2013, 3rd edition); Landscape and Seascape Character Assessments – https://www.gov.uk/guidance/landscape-and-seascape-character-assessments.	cumulative assessment is presented in section 9.
NPS EN-1 (2023)	Paragraph 5.10.17 goes on to say that '*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'.*	Published landscape character assessments and associated studies for the study area are referred to in section 7.2 of this chapter.
NPS EN-1 (2023)	Paragraph 5.10.19 states that '*The applicant should consider landscape and visual matters in the early stages of siting and design, where site choices and design principles are being established. This will allow the applicant to demonstrate in the ES how both negative effects have been minimised and opportunities for creating positive benefits or enhancement have been recognised and incorporated into the design, delivery and operation of the scheme.*'	The balance between mitigation of visual and landscape effects and significant operational constraint/ reduction in function is considered in Chapter 4 (document reference 6.1.4). The Project's approach to good design is set out in the Design Approach Document (document reference 8.18) and the design principles are outlined in the Design Principles Statement (document reference 8.19).
NPS EN-1 (2023)	Paragraph 5.10.20 advises '*The assessment should include the effects on landscape components and character during construction and operation'* while paragraph 5.10.21 advises *'The assessment should include the visibility and conspicuousness of the project during construction and of the presence and*	The landscape and visual effects resulting from the onshore elements of the Project during construction and operation are assessed in section 7.2 and section 7.3 respectively.

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	operation of the project and potential impacts on views and visual amenity.'	
NPS EN-1 (2023)	At paragraph 5.10.22 the document states that *'The assessment should also address the landscape and visual effects of noise and light pollution, and other emissions, from construction and operational activities on residential amenity and on sensitive locations, receptors and views, how these will be minimised.'*	The mitigation of landscape and visual effects through good design are considered within the LVIA at section 7.3.
NPS EN-1 (2023)	Paragraph 5.10.24 introduces the potential for landscape management plans to be considered as they may help to enhance environmental assets.	The OLEMS (document reference 8.10) describes measures to be employed during construction and restoration. It also provides longer term outline landscape and habitat management of the OnSS.
NPS EN-1 (2023)	Paragraph 5.10.26 advises that '*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, the electricity generation output. There may, however, be exceptional circumstances, where mitigation could have a 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 balance between mitigation of visual and landscape effects and significant operational constraint/ reduction in function is considered in Chapter 4 (document reference 6.1.4). The Project's approach to good design is set out in the Design Approach Document (document reference 8.18) and the design principles are outlined in the Design Principles Statement (document reference 8.19).
NPS EN-1 (2023)	Paragraph 5.10.27 advises – '*Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within its development site and wider setting. The careful consideration of colours and materials will support the delivery of a well-*	As described in Chapter 3 (document reference 6.1.3), the refinement of the OnSS, onshore ECC and 400kV cable corridor has been carefully considered alongside the potential for

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	designed scheme, as will sympathetic landscaping and management of its immediate surroundings.'	landscape and visual effects and mitigation, as set out in section 5.
National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (DESNZ, 2023)	Paragraph 2.5.2 advises – *'Proposals for renewable energy infrastructure should demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-existence / co-location with other marine uses, and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage.'*	The mitigation of landscape and visual effects through good design are considered within the LVIA, as set out in section 5. The Project's approach to good design is set out in the Design Approach Document (document reference 8.18) and the design principles are outlined in the Design Principles Statement (document reference 8.19).
NPS EN-3 (2023)	Paragraph 2.8.64 highlights the complex nature of offshore windfarm development. It is recognised that the details of a proposed scheme, including the location and configuration of turbines and associated development, the exact turbine dimensions, the precise cable type and route and the exact locations of the offshore and onshore substations, may not be known at the time of the application to the SoS.	Section 5 sets out the maximum design parameters that have been defined to ensure that the worst case landscape and visual effects are assessed. Chapter 17: SLVIA (document reference 6.1.17) assesses the effects of the offshore elements of the Project on seascape, landscape and visual receptors.
NPS EN-3 (2023)	Paragraph 2.8.200 advises – *'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 for the LVIA and SLVIA were consulted on and agreed with the relevant statutory consultees as part of the Expert Topic Group (ETG) meetings and bilateral engagement including site visits. See Section 3 Consultation.
National Policy Statement for Electricity Networks Infrastructure (NPS EN-5) (DESNZ, 2023)	Paragraph 2.9.9 of Draft NPS EN-5 advises – 'New substations, sealing end compounds (including terminal towers), and other above-ground installations that serve as connection, switching, and voltage transformation points on the electricity network may also give rise to adverse landscape and visual impacts.'	The proposed onshore ECC and 400kV cable corridor are to be underground. The LVIA has assessed the effects of the underground onshore ECC and 400kV cable corridor and OnSS in sections 7, 7.2 and 7.3.

Legislation /policy	Key provisions	Section where legislation or policy is addressed
NPS EN-5 (2023)	Paragraph 2.9.10 of Draft NPS EN-5 advises – *'Cumulative adverse landscape, seascape and visual impacts may arise where new overhead lines are required along with other related developments such as substations, windfarms, and/or other new sources of generation.'*	Cumulative landscape and visual effects of the onshore infrastructure are considered in section 9.
NPS EN-5 (2023)	Paragraph 2.9.11 of Draft NPS EN-5 advises – *'Landscape and visual benefits may arise through the reconfiguration, rationalisation, or undergrounding of existing electricity network infrastructure. Though mitigation of the landscape and visual impacts arising from overhead lines and their associated infrastructure is usually possible, it may not always be so, and the impossibility of full mitigation in these cases does not countermand the need for overhead lines.* Paragraph 2.9.12 of Draft NPS EN-5 advises – *'However, in nationally designated landscapes (for instance, National Parks, The Broads and Areas of Outstanding Natural Beauty) even residual impacts may well make an overhead line proposal unacceptable in planning terms.'*	The proposed onshore ECC and 400kV are to be underground. The LVIA has assessed the effects of the underground onshore ECC and 400kV cable corridor and OnSS in sections 7, 7.2 and 7.3. Section 5 of this chapter sets out the embedded mitigation that is included for the Project and section 7.3 assesses visual impacts.
NPS EN-5 (2023)	Paragraph 2.9.18 states '*The Horlock Rules – guidelines for the design and siting of substations – were established by National Grid in 2009 in pursuance of its duties under Schedule 9 to the Electricity Act 1989. These principles should be embodied in applicants' proposals for the infrastructure associated with new overhead lines.*'	The Horlock Rules are considered in the Design Principles Statement (document reference 8.19).
National Planning Policy Framework (NPPF) (DLUHC, 2023)	Paragraph 180 of NPPF advises: *'Planning policies and decisions should contribute to and enhance the natural and local environment by:* *a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner*	The mitigation of landscape and visual effects through good design are considered within the LVIA, as set out at section 5. The Project's approach to good design is set out in the Design Approach Document (document reference 8.18) and

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	commensurate with their statutory status or identified quality in the development plan); *b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;* *c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;* *d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;'*	the design principles are outlined in the Design Principles Statement (document reference 8.19). Provision for biodiversity and ecological networks is outlined in the OLEMS (document reference 8.10).
NPPF (2023)	Paragraph 181 of NPPF advises '*Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.'*	The LVIA includes consideration of effects on landscape character including landscape designations. Effects on landscape character and landscape designations are assessed in section 7.2 of this chapter.
NPPF (2023)	Paragraph 182 of NPPF advises *'Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks*	The LVIA includes consideration of effects on landscape character including landscape designations. Effects on landscape character and landscape designations are assessed in section 7.2 of this chapter.

Legislation /policy	Key provisions	Section where legislation or policy is addressed
	and the Broads. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.'	

3 Consultation

10. Consultation is a key part of the Development Consent Order (DCO) application process. Consultation regarding the LVIA has been conducted through the following processes:
    - Evidence Plan Process (EPP) including Expert Technical Group (ETG) meetings;
    - EIA scoping process (ODOW, 2022)
    - Section 47 consultation process (all public consultation phases including phase 1 and 1a); and,
    - Section 42 consultation process (including Phase 2 Consultation, Autumn Consultation and Targeted Winter Consultation).
11. An overview of the Project consultation process is presented within Volume 1, Chapter 6: Technical Consultation (document reference 6.1.6).
12. A summary of the key issues raised during consultation to date, specific to the LVIA, is outlined below in Table 3.1, together with how these issues have been considered in the production of this LVIA.

Table 3.1: Summary of consultation relating to LVIA

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
Scoping Opinion[1] Comments		
9th September 2022 Scoping Opinion The Planning Inspectorate	*"Effect of export cable landfall – O&M The Scoping Report currently provides limited information on the nature of the landfall, both in terms of its location and the structures that could be in place following construction, together with the sensitive receptors that could be affected by the landfall works, and the nature of any restoration and planting works. The ES should include sufficient information on restoration measures and timescales to allow understanding of any change in appearance of land resulting from the Proposed Development. The ES should assess any likely significant effects of the export cable landfall and also demonstrate how consultation with the relevant consultation bodies and stakeholders has been taken into account."*	The potential effects of the landfall are assessed in section 7. Information on land restoration is contained in the OLEMS (document reference 8.10).

[1] 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 consultation phase/ type	Consultation and key issues raised	Section where comment addressed
9th September 2022 Scoping Opinion The Planning Inspectorate	*"Effects of onshore ECC – O&M* *The Inspectorate agrees that in general the introduction of the ECC is unlikely to give rise to significant long-term effects on landscape character and visual resources during operation of the Proposed Development. However, it is unclear whether any easement required would result in permanent landscape changes and the potential for such effects should be considered. The ES should assess the potential for significant short-term effects during the beginning of the operational phase, as proposed reinstatement measures mature along the export cable route."*	The potential for longer term effects associated with the onshore ECC and 400kV cable corridor extending into the operational phase are assessed in section 7.
9th September 2022 Scoping Opinion The Planning Inspectorate	*"Transboundary landscape and visual effects* *The Inspectorate agrees that onshore landscape and visual effects are likely to be localised and that transboundary onshore landscape and visual effects can be scoped out of the assessment."*	Noted and scoping out of transboundary effects referenced at 10.
9th September 2022 Scoping Opinion The Planning Inspectorate	*"Study Area* *The ES should clearly define the study areas that have been used to inform the assessment and give reasons for their selection. This should include reference to a figure showing the extent of the study areas."*	The LVIA study area is shown on Figures 28.1, 28.2, 28.3 and 28.4 (document reference 6.2.28.1 to 6.2.28.4) and the reasons for its extents are explained in section 5.
9th September 2022 Scoping Opinion The Planning Inspectorate	*"Heritage Coast* *The ES should assess impacts to this receptor, where significant effects are likely to occur. The ES should ensure appropriate cross references and coordination between aspect chapters, including Archaeology and Cultural Heritage, for the assessment of effects on the Heritage Coast."*	The proposed Heritage Coast north of Mablethorpe has not been formally defined and therefore there is insufficient information upon which to base an assessment. Cross references to other chapters, including Archaeology and Cultural Heritage, are presented in section 1.

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
9th September 2022 Scoping Opinion The Planning Inspectorate	*"Assessment Methodology The Scoping Report states that the proposed EIA methodology for the LVIA will be based on the method outlined in Section 5 of the Scoping Report but will also comply with the Guidelines for Landscape and Visual Impact Assessment Version 3 (Landscape Institute, 2013). The ES should explain the methodology used and, where it combines the approach from two different methodologies, any differences or limitations with the adopted approach should be made clear."*	Section 6 sets out the Assessment Methodology applied in this chapter and highlights the differences and limitations of this methodology.
9th September 2022 Scoping Opinion The Planning Inspectorate	*"RPGs open to the public The Scoping Report is not clear what 'open to the public' will include for the purposes of the assessment and this should be explained in the ES. For example, whether this includes RPGs where there is public access through PRoW or permissive access, as well as those sites where wider public access by the landowner is permitted."*	No Registered Parks and Gardens (RPGs) fall within the LVIA study area, such that there is no potential for significant effects to arise and therefore a detailed assessment is not required.
9th September 2022 Scoping Opinion The Planning Inspectorate	*"Evaluation of significant effects The ES should explain what aspect-specific criteria are used to define receptor value/sensitivity and magnitude of change for the landscape and visual impact assessment."*	Section 6 Assessment Methodology sets out the criteria.
9th September 2022 Scoping Opinion The Planning Inspectorate	*"Mitigation planting The ES should also demonstrate that where advanced planting is identified to mitigate significant landscape and visual effects, that its implementation is such that it will be mature enough to provide the necessary mitigation screening."*	The photomontages presented on Figures 28.17 to 28.27 (document reference 6.2.28.17 to 6.2.28.27) show an estimate of plant growth after 15 years in order to demonstrate the potential mitigation effect.
30th August 2022 Scoping Opinion Natural England	*"Nationally Designated Landscapes Consideration should be given to any potential direct or indirect impacts to designated landscapes. Please note: as there is only an area of search for the cable corridor at this stage, we are unable to provide definitive advice on specific designated*	The Lincolnshire Wolds AONB lies outwith the LVIA study area, such that there is no potential for significant effects to arise

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	landscapes at this time. However, we note that the settings of the Lincolnshire Wolds Area of Outstanding Natural Beauty may require further consideration once the final cable corridor is confirmed."	and therefore a detailed assessment is not required.
30th August 2022 Scoping Opinion Natural England	*"Landscape/Seascape and visual impacts Natural England would wish to see details of local landscape character areas mapped at a scale appropriate to the development site, as well as any relevant management plans or strategies pertaining to the area. The EIA should include assessments of visual effects on the surrounding area and landscape together with any physical effects of the development, such as changes in topography."*	National Landscape Character Areas are shown across the whole LVIA study area on Figure 28.7 (document reference 6.2.28.7). In the absence of more detailed LCAs covering the OnSS study area, Local Landscape Character Areas have been developed for the purposes of this assessment and are shown on Figure 28.8 (document reference 6.2.28.8) and in conjunction with the ZTV on Figure 28.9 (document reference 6.2.28.9). The LVIA considers physical effects on landscape as well as perceptual changes on landscape character and visual amenity in sections 7, 7.2 and 7.3.
30th August 2022 Scoping Opinion Natural England	"*The EIA should include a full assessment of the potential impacts of the development on local landscape character using landscape/seascape assessment methodologies. We encourage the use of Landscape and Seascape Character Assessment (LCA/SCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA/SCA provides a sound basis for guiding, informing, and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or*	The LVIA presents a full assessment of the effects of the Project on local landscape character following the methodology set out in GLVIA3 in section 7.2.

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	regenerating character, as detailed proposals are developed."	
30th August 2022 Scoping Opinion Natural England	*"Natural England supports the publication Guidelines for Landscape and Visual Impact Assessment, produced by the Landscape Institute and the Institute of Environmental Assessment and Management in 2013 (3rd edition). The methodology set out is almost universally used for landscape and visual impact assessment. For National Parks and Areas of Outstanding Natural Beauty (AONBs), we advise that the assessment also includes effects on the 'special qualities' of the designated landscape, as set out in the statutory management plan for the area. These identify the particular landscape and related characteristics which underpin the natural beauty of the area and its designation status."*	The methodology applied in the LVIA follows GLVIA3 as described in section 6. The proposed location for the OnSS at the Lincolnshire Node is no longer being considered and potential effects on the Lincolnshire Wolds AONB have been scoped out of the assessment as described in section 4 under 'Landscape Designations'.
30th August 2022 Scoping Opinion Natural England	*"In order to foster high quality development that respects, maintains, or enhances, local landscape / seascape character and distinctiveness, Natural England encourages all new development to consider the character and distinctiveness of the area, with the siting and design of the proposed development reflecting local design characteristics and, wherever possible, using local materials. The Environmental Impact Assessment process should detail the measures to be taken to ensure the building design will be of a high standard, as well as detail of layout alternatives together with justification of the selected option in terms of landscape impact and benefit."*	Local Landscape Character has been taken into account in of the site selection of the OnSS along with other environmental and technical considerations which are taken into account. Chapter 4 (document reference 6.1.4) sets out the approach to siting and design, and landscape and ecological design principles are set out in the OLEMS (document reference 8.10). Building design will be considered as part of the DCO Application in the Design Principles Statement (document reference 8.19.).
30th August 2022	*"The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In*	The cumulative effects of the Project in conjunction with other relevant existing

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
Scoping Opinion Natural England	*this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping stage would be likely to be a material consideration at the time of determination of the planning application."*	and proposed developments are considered in section 9. This assessment includes relevant pre-application stage developments.
30th August 2022 Scoping Opinion Natural England	*"The assessment should refer to the relevant National Character Areas which can be found on our website. Links for Landscape / Seascape Character Assessment at a local level are also available on the same page. https://www.gov.uk/government/publications/seascape-assessments-for-north-east-northwest-south-east-south-west-marine-plan-areas-mmo1134 https://data.gov.uk/dataset/3fed3362-2279-4645-8aaf-c6b431c94485/mmo1037-marinecharacter-areas"*	Section 7.2 sets out the effects of the Project on landscape character with reference to Natural England's National Character Areas.
Phase 2 Consultation (Section 42 consultation on the PEIR) Comments		
20th July 2023 Section 42 Comments Natural England	*'The current route planning option, focussing on a grid connection at a proposed Lincs Node Sub Station site which involves the siting of a substation within the setting of the LW AONB, presents Natural England with strong concerns for the impact that this will have on the statutory function of the LW AONB site. Further to this, we advise that the installation of additional infrastructure necessary with the development of a substation in this location would likely constitute a significant adverse effect and compromise the statutory function of the LW AONB.'*	The proposed location for the OnSS at the Lincolnshire Node is no longer being considered and potential effects on the Lincolnshire Wolds AONB have been scoped out of the assessment as described in section 4 under 'Landscape Designations'.
21st July 2023 Section 42 Comments Lincolnshire County Council (LCC)	*'It is requested that further landscape and visual consultation is carried out between AAH, District Authority landscape specialists and the developer team following the conclusion of this formal consultation phase. This would likely cover the PEIR comments as well as development proposals and mitigation scheme, including the cable route*	Since the S42 Comments were received there have been three other ETGs held in respect of LVIA, on the 27th July 2023, 22nd September 2023 and 20th November 2023 during

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	corridor and location of any larger structures or buildings such as the substations, extent of vegetation loss for highways works, and also subsequent knock-on effects such as any requirement for additional viewpoints or AVRs.'	which further information has been shared. Key comments and agreements are included in this Table 3.1. An accompanied site visit was also conducted on the 25th September 2023 with LCCs representative landscape architect.
21st July 2023 Section 42 Comments Boston Borough Council (BBC)	*'The Council would expect a landscape and visual assessment for any above ground features and for each to be looked at separately.'*	In respect of the landfall, onshore ECC and 400kV cable corridor there are no residual above ground features that will be of a sufficient size or prominence to give rise to significant effects. A full assessment of the effects of the OnSS is presented at sections 7.2,7.3 and 9.
21st July 2023 Section 42 Comments BBC	*"The EIA should include a full assessment of the potential impacts of the development on local landscape character using landscape assessment methodologies. The use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013 is encouraged."*	The assessment of effects on landscape character is presented at section 7.2 with reference to the relevant LCAs for the LVIA study area.
21st July 2023 Section 42 Comments BBC	*"The EIA should include assessments of visual effects on the surrounding area and landscape together with any physical effects of the development, such as changes in topography and loss or disturbance of vegetation. "*	The assessment of effects on visual amenity is presented at section 7.3. The assessment of effects on physical elements is presented at section 7.
21st July 2023 Section 42 Comments BBC	*"The Environmental Impact Assessment process should detail the measures to be taken to ensure the building design will be of a high standard, as well as detail of layout alternatives together with justification of the selected option in terms of landscape impact and benefit. "*	Information on the design of the OnSS is presented in the Design Approach Document (document reference 8.18) and the Design Principles Statement (document reference 8.19).

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
		Detailed design will be developed further post DCO Application. Information of alternative sites is presented at Chapter 4 (document reference 6.1.4).
21st July 2023 Section 42 Comments BBC	*'The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. A list of proposed cumulative schemes should be submitted and approved prior to the assessment being undertaken. Cumulative impact assessment should include other proposals currently at Scoping stage and onwards.'*	The cumulative assessment is presented in section 9 and includes the National Grid Onshore Substation (NGSS) which is at the pre-application stage, despite the limited information available.
21st July 2023 Section 42 Comments BBC	'*Operational effects arising from the Onshore ECC and export cable landfall should be scoped into the assessment as there is potential for a loss of vegetation and alteration of the baseline landscape and visual resource which will be longer lasting than the construction phase and the long-term effectiveness of remediation and mitigation proposals should be considered.'*	The residual effects arising from the construction of the landfall, onshore ECC and 400kV cable corridor will be very limited as assessed in sections 7 and 7.3. The residual effects extending from the construction phase into the operational phase are also considered in these sections.
21st July 2023 Section 42 Comments Weston Parish Council	*'Residents in the area affected particularly by the proposed sub-station are concerned primarily by the size and visual aspects of the sub-station and would want to press for screening in the form of trees etc to be carried out at the initial stage.'*	The mitigation planting plan is shown in Volume 3, Figure 28.15 (document reference 6.2.28.15) and included in the visualisations in document reference 6.3.28.1. Mitigation planting is also covered in the OLEMS (document reference 8.10).
21st July 2023 Section 42 Comments	*'We are extremely concerned at the potential for large pylon type structures to carry cables to and from the building, again totally alien features in this area.'*	The onshore cables will all be located underground and will, therefore, not need towers.

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
Bilsby & Farlesthorpe Parish Council		The visual effects of the construction of the onshore ECC and 400kV cable corridor are presented at section 7.3.
24th November 2023 Section 42 Comments Boston Borough Council	*"The changes to the scheme have been reviewed by external consultants Terra Loci. Firstly, we would like to reiterate some comments previously made following various ETG meetings:* *- New substation size and proposed mitigation planting - Figure 28.15 - Surfleet Marsh OnSS Indicative Layout and Mitigation Planting shows general areas and locations for mitigation planting but does not indicate intended height or types of mitigation planting proposed, this should be clarified during assessment. Where off site mitigation planting / hedgerow is shown as under consideration, assessment of effects should be undertaken for scenarios with and without this planting to indicate the effectiveness and potential requirement for this mitigation planting.* *- Updated viewpoint locations - The additional viewpoint locations circulated on the 06/11/23 are more comprehensive and take on board previous comments, these are appropriate to assess the potential for visual impacts. Approach to assessment considering a Project Design Envelope (PDE) based on the AIS footprint and GIS height with visuals showing indicative models of both technologies with the PDE. This proposed PDE appears to consider the 'worst case' scenario from each technology and is an appropriate basis for assessment of potential landscape and visual impacts. The technology modelled in each visual should be clearly indicated."*	Information on the mitigation planting is presented in the OLEMS (document reference 8.10). This specifies whips would be planted at approximately 0.8m in height and that the anticipated growth of trees would be between 0.4m and 0.5m per annum to give an approximate height range of 6.8 to 8.3m after 15 years of growth. While the OLEMS (document reference 8.10) presents some suggested species, the final planting palette will be developed in the Landscape and Ecology Mitigation Strategy (LEMS) post consent. On-site and off-site mitigation planting is photo-montaged in the visualisations for the representative viewpoints and the assessment in the LVIA covers scenarios in which the mitigation planting is and is not taken into account. Noted regarding the appropriateness of the updated viewpoint list for the LVIA. Noted regarding the appropriateness of the

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
		maximum design scenario based on the Air Insulated Switchgear (AIS) footprint and the gas Insulated Switchgear (GIS) height – the visualisations in Figures 28.17 to 28.27 (document reference 6.2.28.17 to 6.2.28.27) are clearly labelled to ensure the distinction is readily apparent.
24th November 2023 Section 42 Comments South Holland District Council	*"We note that, for some of the proposals made by the project, Natural England has some relevant standing advice which it deems would be useful for the project to be aware of. This standing advice is aimed at maximising the benefits to nature and landscape when considering the design principals for some elements of developments. Landscaping proposals should show that, wherever possible, they have accounted for the relevant National Character Area profiles. For example, there is a need to ensure that any mitigation planting is not only delivering the intended mitigation but that it is also sympathetic with existing character set out within the NCA profile. Details of NCA profiles can be found here - Natural England Access to Evidence - National Character Areas."*	The onshore substation is situated within National Character Area (NCA) 46: Fens as classified by Natural England. The classification for this NCA highlights the openness of the landscape, the importance of agricultural production and the scarcity of woodland cover but does also reference the presence of shelterbelts and roadside planting as a baseline feature. In respect of the over-riding objective of the LVIA to screen the onshore substation as far as is practical, the use of a framework of shelterbelt and road-side planting fulfils this role whilst also respecting the baseline character of the landscape. An overview of landscape character is presented at section 4.

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
28th December 2023 Section 42 Comments Lincolnshire County Council	*"The presentation from the November Technical Working Group meeting confirms the analysis made onsite with the Applicants Landscape Architect. The Council is happy with the approach, the viewpoints and the proposals for onsite and offsite mitigation. There are no other issues and it's just a case of waiting for the DCO application with the LVIA."*	Noted.
28th December 2023 Section 42 Comments Lincolnshire County Council	*"Theres quite a number of construction compounds and this will be an important issue in regards restoration and protection during construction that needs to be assessed appropriately."*	The focus of sections 7 and 7.3 of the LVIA in respect of the onshore export cable corridor is the potential physical and visual effects associated with the temporary construction compounds for both sections where open-cut trenching and trenchless techniques will be deployed.
28th December 2023 Section 42 Comments Lincolnshire County Council	*"The core mitigation planting around the substation is combined with offsite mitigation including along the A16 and this is shown in the maps from the consultation, it correlates with the ideas discussed on site, so in the current level of detail is an acceptable strategy."*	The indicative mitigation planting is illustrated in the visualisations at 15 years of growth, as illustrated in Figures 28.17 to 28.27 (document reference 6.2.28.17 to 6.2.28.27) assessed within the LVIA at section 7.3 and with detail presented in the OLEMS (document reference 8.10).
28th December 2023 Section 42 Comments Lincolnshire County Council	*"Table 3.5 details the impact of the changes on the LVIA, including the decision to include offsite planting to aid the mitigation of the substation. This table presents the progression and expectation of the ES to flesh out the details of these current proposals."*	The detail of the mitigation planting is included in the OLEMS (document reference 8.10).

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
Expert Topic Group (ETG) Meetings		
22nd September 2023 Environmental Topic Group Meeting	Representatives from NE, LCC and S+ELCP agreed that the assessment of effects on the Lincolnshire Wolds AONB could be scoped out owing to the removal of Lincolnshire Node as a potential location for the OnSS.	An overview of landscape designations and their relevance to this assessment is set out at section 4.
22nd September 2023 Environmental Topic Group Meeting	The representative landscape architect for S+ELCP suggested ten viewpoints would be a more appropriate number than the original five viewpoints and suggested inclusion of viewpoints representing the nearby settlements of Surfleet Seas End and Gosberton.	An additional five viewpoints have been included to bring the total number of viewpoints to ten. These are assessed at section 7.3. A representative viewpoint is included from Surfleet Seas End. Visibility from Gosberton was so limited that a viewpoint was not included from this location.
22nd September 2023 Environmental Topic Group Meeting	The representative landscape architect for LLC agreed more viewpoints would be beneficial to the assessment and requested more middle range viewpoints out to 2km from the OnSS be included.	Site work was undertaken by the Project's landscape architect accompanied by LLCs representative landscape architect with a range of potential additional middle range viewpoints visited and photographed. These are assessed at section 7.3.
22nd September 2023 Environmental Topic Group Meeting	Representatives from NE, LCC and S+ELCP agreed that both AIS and GIS should be shown in visualisations to illustrate the two different technologies. Given the increase in footprint of the AIS from PEIR, the Project noted that the GIS would no longer necessarily provide a worst case scenario for all receptors	The visualisations showing models of both the AIS and GIS technologies are presented in document reference 6.1.28.1.
20th November 2023 Environment	Representatives of LCC and the Local Planning Authorities (LPAs) agreed to the inclusion of the five additional representative viewpoints.	A detailed assessment of the effects on all 11 of the representative viewpoints is presented at section 7.3

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
al Topic Group Meeting		
20th November 2023 Environmental Topic Group Meeting	Representatives of LCC and the LPAs agreed to the LVIA using a 'Maximum Design Envelope' (MDE) based on the AIS OnSS footprint and GIS OnSS height are used.	A description of the MDE is presented at section 5 and visualisations illustrating the MDE are shown in Figures 28.17 to 28.27 (document reference 6.2.28.17 to 6.2.28.27).
Autumn Consultation (Section 42 consultation on Project Refinements) Comments		
Public Information Day Feedback Forms	Concerns expressed around the use of deciduous trees in terms of the loss of foliage in winter months and understanding that fir trees would not be appropriate in respect of existing landscape character.	The final planting mix will be detailed in the LEMS and will comprise mostly deciduous species but with a mix of evergreen where appropriate to give the shelter belts all-year-round structure.
Public Information Day Feedback Forms	*"We have a mixed native hedge at the rear of our garden. 10 years since planting (next March). It is in excess of 12 feet high and is cut back by about 5 feet every winter. I would expect the planting to be an effective screen before 15 years (we have hawthorn, field maple, wild privet, wild rose, blackthorn plus several other species)."*	The growth rates applied to produce the visualisations in Figures 28.17 to 28.27 (document reference 6.2.28.17 to 6.2.28.27) are based on conservative values to ensure an achievable outcome is represented. Growth rates are described in the OLEMS (document reference 8.10).
Targeted Winter Consultation (Section 42 consultation on Project Refinements) Comments		
No comments received in relation to LVIA.		

13. As identified in Chapter 3 (document reference 6.1.3) and Chapter 4 (document reference 6.1.4), the PDE has been refined following scoping, PEIR and S42 consultation. This process is reliant on stakeholder consultation feedback.
14. Design amendments to the landfall, onshore ECC, 400kV cable corridor and OnSS are of relevance to this chapter.

4 Baseline Environment

4.1 Study Area

15. The initial step in the LVIA is the establishment of the study area for the assessment. The onshore LVIA study area for the onshore elements of the Project extend to define a limit beyond which professional judgement considers it would be unlikely for significant effects to arise. This judgement is based on knowledge of similar projects, an understanding of the character of the local landscape, as well as an understanding of the scale of the construction and development of the onshore components of the Project. The LVIA study area covers the landfall, onshore ECC, 400kV cable corridor and the OnSS.
16. Those parts of the LVIA study area that cover the landfall, onshore ECC and 400kV cable corridor extend to a 1km buffer around these components. The onshore ECC and 400kV cable corridor will comprise a 80m working width during construction with a 60m wide permanent easement. Volume 3, Figures 28.1, 28.2, 28.3 and 28.4 (document reference 6.2.28.1 to 6.2.28.2) show the location of the onshore ECC and 400kV cable corridor. The corridor will widen where the landfall and trenchless crossings occur, as well as where the cables ingress and egress from the OnSS and ingress into the NGSS. The associated buffer which makes up the study area is, therefore, wider in those areas.
17. The part of the LVIA study area that covers the location of the OnSS extends to a 5km buffer around the maximum footprint of the OnSS. Together, the 1km buffer around the landfall, onshore ECC, 400kV cable corridor and the 5km buffer around the OnSS, form the onshore LVIA study area for the onshore elements of the Project.
18. The extent of the LVIA study area relevant to each onshore component has been agreed with the statutory consultees through the Expert Topic Group Meeting as documented in Table 3.1.
19. The onshore LVIA study area covers the landfall down to Mean Low Water Springs (MLWS), with the area seaward covered by the offshore Seascape, Landscape and Visual Impact Assessment (SLVIA) study area (document reference 6.1.17).
20. The onshore LVIA study area is not intended to provide a boundary beyond which the onshore elements of the Project would not be seen, but rather to define the area within which there is potential for significant landscape or visual effects to occur. In addition, a significant effect is very unlikely to occur towards the edges of the onshore LVIA study area.

4.2 Data Sources

The key data sources used to inform the baseline for the LVIA are presented in Table 4.1: Data Sources for LVIA below.

Table 4.1: Data Sources for LVIA

Data Source	Summary	Spatial Coverage of Data
Ordnance Survey (OS)	OS 1:50,000, 1:25,000 Terrain 50 and Terrain 5 DTM data	UK National mapping coverage.
Ordnance Survey (OS) Open Data	National landscape planning designations. Settlements, roads, railways, PRoWs and National Trails.	UK National OS data able to provide designations, settlements, roads, railways, PRoWs and National Trails.
Natural England	National Landscape Character Area Profiles https://nationalcharacterareas.co.uk/	England
Historic England	Registered Parks and Gardens https://historicengland.org.uk/listing/what-is-designation/registered-parks-and-gardens/	England
Lincolnshire County Council	Rights of Way https://www.lincolnshire.gov.uk/coast-countryside/public-rights-way/3 Central Lincolnshire Plan Adopted April 2023 (pages 142 and 148) chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.n-kesteven.gov.uk/sites/default/files/2023-04/Local%20Plan%20for%20adoption%20Approved%20by%20Committee.pdf	Lincolnshire
East Lindsey District Council	East Lindsey District Landscape Character Assessment, Volumes One and Two, LCA and Landscape Guidelines (November 2011, Land Use Consultants);	District level coverage of landscape character assessments in East Lindsey District.

4.3 Existing Environment

21. This section identifies landscape and visual receptors that have potential to be significantly affected by the onshore elements of the Project. It provides a description of the existing landscape and visual receptors in the area that may be affected, and this is referred to as the

landscape and visual baseline.

22. When reviewed alongside the description of the onshore elements of the Project provided in Chapter 3 (document reference 6.1.3), the established baseline will form the basis for the identification and description of landscape and visual effects.
23. The identification of those landscape and visual receptors that may be affected by the Project is primarily determined by their location relative to the onshore elements of the Project. In respect of the OnSS, the ZTV assists in the identification of landscape and visual receptors with potential to be significantly affected (Volume 3, Figures 28.5 (document reference 6.2.28.5), 28.6 (document reference 6.2.28.6), 28.7 (document reference 6.2.28.7), 28.8 (document reference 6.2.28.8), 28.9 (document reference 6.2.28.9) and 28.10 (document reference 6.2.28.10)). A full explanation of ZTVs is presented at section 6.9.
24. The baseline also describes current pressures that may cause change in the landscape in the future, and which need to be considered cumulatively with the Project, in particular drawing on information for other developments that are not yet present in the landscape but are at other stages in the planning process.
25. A preliminary assessment has identified those landscape and visual receptors that may have the potential to experience significant effects, which require to be assessed in full (see sections 7, 7.2 and 7.3). This section provides a baseline overview, and a detailed baseline description is provided separately within the assessment section for each receptor that has potential to be significantly affected.
26. This LVIA assesses the effects of the landfall, the onshore ECC, the 400kV cable corridor and the OnSS. The multiple options for the ONSS location and onshore ECC routing assessed at PEIR have been reduced down to a single option for the ES, in respect of each onshore component.

4.3.1 Landscape Baseline Overview

27. All onshore components of the Project are located in the Lincolnshire County Council area. The landfall is located in the East Lindsey District Council area, the OnSS is located in the South Holland District Council area, and the onshore ECC which connects them, passes through the East Lindsey District Council, Boston Borough Council and South Holland District Council areas.
28. The eastern part of Lincolnshire, within which the LVIA study area occurs, is characterised by the flat coastal plains of the reclaimed marshes in the north and the fens in the south. Coastal towns and resorts occur in the northern part of the LVIA study area, where there are beaches and dune landscapes. Inland from the coastline, the landscape of the LVIA study area is largely characterised by agricultural lowland landscapes, with fields of arable and improved pasture and some enclosure from hedgerows and localised tree cover. Large parts of this farmed landscape have been reclaimed from marshland, which is evident in the flatness of the landscape and extent of drainage ditches and channelised river courses. Whilst the landscape of the LVIA study area is rural in nature, there is also an influence from larger inland settlements, such as Boston and Spalding and key transport routes including the A16, A52 and connecting rail lines.

Landscape Character

29. The English landscape is classified at the national level by National Character Areas (NCAs). The 48 NCAs are defined at a broad landscape scale, each with descriptive character profiles. The proposed onshore elements of the Project and the LVIA study area lie within the following NCAs as shown on Volume 3, Figure 28.7 (document reference 6.2.28.7).
    - 42 - Lincolnshire Coast and Marshes NCA; and
    - 46 - The Fens NCA.
30. On the Natural England website (2023) the Lincolnshire Coast and Marshes NCA is described as follows;

"This area is characterised by 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. The area is bounded by the North Sea along its eastern edge and by the Lincolnshire Wolds to the west. The wide coastal plain incorporates three distinctively different but closely interconnected areas which run broadly parallel with the edge of the Wolds. To the west is the Middle Marsh which comprises a softly undulating arable landscape with a greater number of woodlands and hedgerows than other areas. To the east lies the Outmarsh, an open landscape of arable land, mixed with rich pasture divided by narrow dykes. The Outmarsh has changed in character – and was once as grassy as Romney Marsh or the Somerset Levels. It has gradually turned into an area which is predominately arable, particularly since effective pump drainage was introduced in the 2nd half of the 20th century, following the 1953 floods."

31. On the Natural England website (2023) The Fens NCA is described as follows;

"The Fens National Character Area (NCA) is a distinctive, historic and human-influenced wetland landscape lying to the west of the Wash estuary, which formerly constituted the largest wetland area in England. The area is notable for its large-scale, flat, open landscape with extensive vistas to level horizons. It is a large, low-lying, flat landscape with many drainage ditches, dykes and rivers that slowly drain towards the Wash, England's largest tidal estuary. The single obvious factor uniting the Fens is the low-lying, level terrain reflecting its geological past. With the exception of the Isle of Ely, which reaches above 20 m, elevations rarely pass the 10m contour, and typically vary by little more than one or two metres over long distances. Much of the land is below sea level, relying on pumped drainage and the control of sluices at high and low tides to maintain its agricultural viability. Four major rivers drain into the Wash: the Witham, Welland, Nene and Great Ouse. All rivers now have artificial canalised courses that run straight for long distances and are bounded by high banks to contain the watercourse from the lower adjacent fields."

32. A district level landscape character assessment has been carried out by East Lindsey District Council, providing a more detailed level assessment across the northern half of the LVIA study area. This shows that the landfall is situated in LCA 83 - Tetney Lock to Skegness Coastal Outmarsh as shown on Volume 3, Figure 28.9 (document reference 6.2.28.9).

33. There is no district level character assessment for the southern part of the LVIA study area and, therefore, The Fens NCA is used as the basis of the assessment for the OnSS, with further detail added in the identification of two Local Landscape Character Areas (LLCAs), identified for the purposes of this assessment. The NCAs, LCAs and the LLCAs are shown on Volume 3, Figures 28.7 (document reference 6.2.28.7), 28.8 (document reference 6.2.28.8) and 28.9 (document reference 6.2.28.9). The ZTV in conjunction with Landscape Character are presented on Volume 3, Figure 28.9 (document reference 6.2.28.9) showing the extent to which the OnSS will be visible across the NCA and LLCAs, with the effects assessed in detail in section 7.2.

Landscape Designations

34. A landscape designation is an area of landscape identified as being of importance at international, national or local level, either defined by statute or identified in development plans or other documents. The landscapes are designated in relation to their special qualities or features which warrant special consideration through the planning system.
35. There are three ways in which such designations are relevant to the LVIA:
    - The presence of a designation can provide an indication of a recognised value that may increase the sensitivity of a landscape character receptor, viewpoint or visual receptor, and may therefore affect the significance of the effect on that receptor;
    - The presence of a relevant designation can lead to the selection of a representative viewpoint within the designated area, as the viewpoint will provide a representative outlook from that area; and
    - Designated areas may be included as landscape character receptors so that the effects of the proposed onshore elements of the Project on the landscapes that have been accorded particular value can be specifically assessed.
36. In relation to the proposed onshore elements of the Project, while there are no landscape designations within the LVIA study area, the nature conservation designation of The Wash National Nature Reserve (NNR) overlaps slightly with the eastern extent of the LVIA study area. Landscape Designations are mapped on Volume 3, Figure 28.10 (document reference 6.2.28.10) to illustrate their location outwith the LVIA study area. There will, therefore, be no significant effects on landscape designations as they lie beyond the distance within which there is potential for significant effects to arise.
37. The effects on cultural heritage assets are assessed in Chapter 20 (document reference 6.1.20).

4.3.2 Visual Baseline Overview

38. Principal Visual Receptors within the LVIA study area are typical of the East Lindsey, Boston and South Holland coast and their rural and agricultural hinterland. Principal visual receptors found within the LVIA study areas include roads, railways, rural properties, settlements and recreational routes. Principal visual receptors are mapped on Volume 3, Figure 28.11 (document reference 6.2.28.11) and in conjunction with the ZTV for the OnSS on Volume 3, Figure 28.12 (document reference 6.2.28.12).

39. Settlements are varied in size within this eastern part of Lincolnshire, with the larger settlements of Skegness set on the coast in the northern part of the LVIA study area and Boston set inland in the southern part. Medium sized settlements include Chapel St Leonards on the coast to the north of Skegness and the historic town of Alford set inland to the west. A network of small towns, villages and hamlets extend across much of the rural landscape and while these are generally formed around a historic core in the northern part, they are typically more modern in the southern part, denoting the different period during which these landscapes have been reclaimed.
40. There is a hierarchical network of roads across the LVIA study area with the A16 and A52 forming the main inland and coastal routes between the northern and southern part of the LVIA study area, and other 'A' and 'B' class roads connecting the main settlements in the more populated northern and southern parts. A fine network of minor roads then provides access to the expanse of rural farmsteads and properties which are a characterising feature of the settled and cultivated landscape. There is also a network of railway lines that connect Spalding, Boston and Skegness. Transport routes in this landscape are typically straight owing to the flatness of the landscape and the absence of landscape features with the exception of the channelised rivers which sometimes require transport routes to be diverted towards bridging points.
41. Recreational walking and cycling routes are found within the LVIA study area. A section of the England Coast Path follows the eastern coastline between Mablethorpe in the north and Skegness in the south and there are also a number of walking routes along the embankments of the channelised rivers in the southern part of the LVIA study area, most notably the McMillan Way along the River Welland which passes between Surfleet Marsh on the west and Weston Marsh on the east. Public Rights of Way (PRoWs) provide access across the rural landscape with also occasional bridleways providing access for horse riders.

4.3.2.1 Onshore ECC and 400kV Cable Corridor

42. As the cables are proposed to be buried there will be little or no visual effects resulting from the onshore ECC and 400kV cable corridor once operational. In addition, the relatively small scale of the onshore ECC and 400kV cable corridor construction works, their location in a predominantly intensively farmed landscape, and the limited occurrence of surrounding settlements and roads, means that only the views of close-range receptors will be affected during the construction phase.

4.3.2.2 OnSS

43. The built infrastructure proposed for the OnSS will have a much greater extent of visibility than the landfall, onshore ECC and 400kV cable corridor and, therefore, visual receptors over a wider area will potentially be affected. Visual effects will also occur during operation, as well as construction and decommissioning. As there is the potential that visual receptors in the OnSS study area could be significantly affected, a detailed assessment is required and is based on ten viewpoints selected to represent visual receptors in the study area.
44. The viewpoints have been selected to represent residents, road-users, walkers and horse-riders

in the local area. Locations have been chosen which best represent the views of local people but which also present a good level of visibility of the OnSS. The viewpoints have been spread around the OnSS to present different aspects and ranges from close to medium. They have also been selected to represent different aspects of the local landscape and to cover the potential cumulative effects with the NGSS proposed for Weston Marsh. The list of the representative viewpoints has been developed in consultation with statutory consultees during ETGs and agreed in advance of production of this ES.

45. Representative viewpoints proposed for the visual assessment of the OnSS are identified in Table 4.2: Representative Viewpoints for the OnSS, below and mapped on Figure 28.12 (document reference 6.2.28.12). The precise viewpoint locations have been finalised based on site survey and potential visibility of the OnSS. Visualisations for the OnSS are provided on Figures 28.17 to 28.27 (document reference 6.2.28.17 to 6.2.28.27).

Table 4.2: Representative Viewpoints for the OnSS

Receptor	Grid Reference		Representative
VP1 Marsh Lane near Manor House	529577E	331949N	Rural residents / Road-users
VP2 A16 near Marsh Lane junction	528195E	332380N	Road-users / Rural residents
VP3 A16 near Gosberton Bank junction	527466E	330780N	Road-users / Rural residents
VP4 Macmillan Way near Ship Inn	528743E	330263N	Walkers / Road-users / Rural residents
VP5 Macmillan Way near Welland House Farm	529500E	330799N	Walkers / Road-users / Rural residents
VP6 Reservoir Road, Surfleet Seas End	527825E	329273N	Road-users / Rural residents
VP7 Wragg Marsh, Marsh Road	526048E	330706N	Road-users / Walkers / Rural residents
VP8 Cook's Road, Gosberton Marsh	529891E	330329N	Road-users / Walkers / Rural residents
VP9 Cunsdike Lane, Gosberton Marsh	527016E	332451N	Road-users / Walkers / Rural residents

Receptor	Grid Reference		Representative
VP10 Willow Farm, Sutterton Dowdyke	527932E	333927N	Road-users / Walkers / Rural residents
VP11 Gosberton	524482E	331533N	Road-users / Walkers / Rural residents

4.4 Cumulative Baseline

46. Existing developments are included in the baseline for the assessment of landscape and visual effects in sections 7.2 and 7.3. These developments have an existing influence on baseline landscape character and visual amenity. In respect of the Surfleet Marsh OnSS, overhead electricity transmission lines cross close to this area and overhead line towers are a common feature.

47. Adjacent developments may complement one another, or may be discordant with one another, and it is the increased or reduced level of significance of effects which arises as a result of this change that is assessed. Where this occurs, the magnitude of change varies according to cumulative effect factors such as its consistency of image and degree of contrast or integration with the onshore elements of the Project, as well as other 'non-cumulative' factors, such as distance, lateral spread and amount of visibility.

4.4.1 Cumulative sites for consideration in the LVIA

48. Cumulative effects refer to effects upon receptors arising from the onshore elements of the Project, when considered alongside other proposed developments and activities and any other reasonably foreseeable project(s) proposals.

49. GLVIA3 (Landscape Institute and IEMA, 2013, p120) defines cumulative landscape and visual effects as those that *"result from additional changes to the landscape and visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future."*

50. Other proposed developments that have the potential for cumulative effects in combination with the onshore elements of the Project are considered to be those developments that are found within the LVIA study areas. Beyond the LVIA study areas cumulative effects are limited by distance and lack of intervisibility with other proposed developments.

51. NatureScot is an executive non-departmental public body of the Scottish Government responsible for the country's natural heritage. In the absence of UK wide guidance on the assessment of cumulative landscape and visual effects, NatureScot's guidance is commonly referred to in UK based EIA. In respect of the proportionality of the CLVIA NatureScot guidance (NatureScot 2021, p8) states that *"The assessment should be proportionate to the likely impacts*

and all CLVIA should accord with the guidelines within GLVIA3. The emphasis should be on the production of relevant and useful information, highlighting why the proposals assessed have been included and why others have been excluded, rather than the provision of a large volume of information."

52. A comprehensive list of projects that have the potential to contribute to cumulative impacts of the onshore elements of the Project has been compiled and this 'long list' and the approach to compiling this list is described in Chapter 5 (document reference 6.1.5). Those cumulative projects listed within the 'long list' and that lie within the LVIA study areas are listed below in Table 4.3: Cumulative Developments relevant to the LVIA and are shown on Figure 28.13 (document reference 6.2.28.13).

Table 4.3: Cumulative Developments relevant to the LVIA

No	Development	Description	Location
1	West End, Hogsthorpe Residential Development	Reserved matters application for the erection of up to 89 dwellings and associated works	190m southeast of onshore ECC
2	Lower Farm Solar Farm (S/195/02340/20)	Application for 49.9MW solar farm	896m east of onshore ECC
3	Watery Lane, Butterwick Residential Development	Consent for the erection of 42 dwellings	1.1km east of onshore ECC
4	Church End Lane, Fishtoft Residential Development	Consent for the erection of 20 affordable dwellings and associated works	800m west of onshore ECC
5	Church End Lane, Fishtoft Residential Development	Consent for the erection of 46 residential dwellings and associated works	800m west of onshore ECC
6	Land off Puttock Gate, Fosdyke. Residential Development	Outline application for the erection of 9 dwellings	220m north of onshore ECC
7	National Grid Substation (NGSS) at Weston Marsh	Pre-application stage development	0m south of 400kV cable corridor
8	Naylor's Farm Plant based protein extraction facility and anaerobic digestor plant (H17-1097-23)	Application stage development	440m west of onshore ECC and 400kV cable corridor

4.5 Future Baseline

53. The baseline character of the landscapes associated with the LVIA study area could evolve in the future as a result of land use policy, environmental improvements and development pressures. This has the potential to alter the baseline assessment of the landscape and visual resource over time relating to the onshore elements of the Project.
54. The most likely evolution of the baseline that is predicted to occur over the time between the point of assessment and the time over which the Project will be built and become operational is through the introduction of future developments. Future developments are considered in the assessment of cumulative effects, see section 9.

5 Basis of Assessment

5.1 Scope of the Assessment

55. The scope of the assessment, in respect of the potential LVIA impacts and receptors to be scoped in, has been informed by a combination of consultation comments (section 3), an understanding of the existing environment (section 4), an understanding of the project description (section 5) and an understanding of the assessment methodology (section 28.9, 28.12 and 28.14). Where it has been necessary to identify which landscape and visual receptors have potential to be significantly affected or not, 'Preliminary Assessments' have been included (sections 7.2 and 7.3).
56. Chapter 17 (document reference 6.1.17) assesses the impacts of the offshore components of the Project on onshore landscape and visual receptors. This chapter assesses the impacts of the onshore components of the Project on onshore landscape and visual receptors.
57. The following impacts have been scoped into this assessment:

- Construction
    - The physical effects on the coastal land, agricultural land, hedgerows and trees resulting from the excavation works associated with the landfall, onshore ECC, 400kV cable corridor and OnSS;
    - The effects on landscape character and visual amenity resulting from the presence of the emerging OnSS, temporary construction compounds (TCCs), access roads, plant, materials, spoil heaps and vehicles, associated with the construction of the landfall, onshore ECC, 400kV cable corridor and OnSS;
    - The effects on landscape character and visual amenity resulting from the excavation, trenchless drilling and land restoration associated with the landfall, onshore ECC, 400kV cable corridor and, the earthworks and construction works associated with the emerging OnSS; and
    - The effects on visual amenity arising from the use of lighting associated with the construction of the OnSS during the hours of darkness.
- Operation and maintenance
    - The effects on landscape character and visual amenity resulting from the presence of the OnSS and associated infrastructure; and
    - The effects on landscape character and visual amenity resulting from the emergence of mitigation and replacement planting.
- Decommissioning
    - The physical effects and effects on landscape character and visual amenity resulting from the removal of electrical equipment from within the OnSS buildings and the removal of the main OnSS building and minor services equipment;

- The physical effects and effects on landscape character and visual amenity as a result of the restoration of the site of the OnSS; and
- The effects on visual amenity arising from the use of lighting associated with the decommissioning of the OnSS during the hours of darkness.

58. The scope of the assessment in respect of the potential LVIA impacts and receptors to be scoped out has been informed by the same considerations as set out above.

- Operation and maintenance:
  - The physical effects and landscape and visual effects resulting from the operational phase of the landfall, onshore ECC and 400kV cable corridor;
  - The landscape and visual effects of the OnSS beyond the 5km radius of the OnSS study area;
  - The visual effects associated with OnSS lighting; and
  - Transboundary effects.

59. The Outline Operational Artificial Light Emissions Management Plan (document reference 8.11) sets out the operational and maintenance requirements for lighting at the OnSS. Regular maintenance at the OnSS will be planned for daylight hours where possible, to reduce the need for artificial lighting, however in winter months and in the event of emergency works additional lighting may be required to meet health and safety requirements. Where dark hours lighting is required, the lighting will be designed to minimise light spillage as far as possible, while providing the necessary levels of light for safety requirements. While a lower level of lighting would remain overnight for security purposes, this would be motion activated.

60. The limited occurrence of dark hours lighting combined with the measures to reduce its impact on the occasions it may be required and the low levels of security lighting mean that its effect on visual receptors will be especially limited and therefore potential effects have been scoped out of the detailed assessment.

5.2 Maximum Design Envelope

61. To allow for design flexibility at detailed design stage, the Project has adopted an assessment approach known as the ‘Maximum Design Envelope’ (MDE) approach or the 'Rochdale Envelope' approach (The Inspectorate, 2018), as described in detail in Chapter 3 Project Description (document reference 6.1.3). As noted in the Inspectorate Advice Note Nine (The Inspectorate, 2018), the Rochdale Envelope approach will be employed where the developer may not know the exact specifications of infrastructure that will comprise the proposed project.

62. Therefore, as the purpose of the EIA process is to assess the maximum extent and worst case potential impacts of the Project, the MDE ensures this purpose is fulfilled and enables a robust and meaningful assessment of potential effects on landscape and visual receptors. If the Project's final extents are less than the PDE, then the impacts will not be any greater than what has been assessed and will likely be less or the same. The MDE allows flexibility for future

design refinements and decisions relating to emerging technologies and detailed design.

63. The MDE in respect of the LVIA is presented in Table 5.1: Maximum Design Envelope for LVIA , below. This approach assesses what is considered the 'worst case' scenario based on the maximum parameters currently defined for the Project and which are detailed throughout Chapter 3 (document reference 6.1.3).
64. The key feature of the LVIA MDE is the consideration of both the GIS OnSS and the AIS OnSS, owing to the maximum height of the GIS OnSS at 16.5m being greater than the maximum height of the AIS OnSS at 13m being notably smaller, and also the maximum footprint of the AIS OnSS at 144,000m^2 being double the maximum footprint of the GIS OnSS at 72,600m^2. Consideration has also been given to the use of converter sheds to house the larger infrastructure in the GIS OnSS, which will have a greater presence in the landscape and greater influence on landscape character and visual amenity.
65. The assessment considers a MDE based on the footprint of the AIS and the height of the GIS and is illustrated in the photomontages in Figures 28.17 to 28.27 (document reference 6.2.28.17 to 6.2.28.27) as a white dashed line defining the maximum extents of the OnSS. Indicative models have been included in the photomontages for the AIS OnSS and GIS OnSS which sit within the maximum extents of the OnSS as defined by the white dashed line, but these are purely to give an impression of the typical appearance of these types of development.
66. Table 5.1 presents the maximum parameters and as such the numbers and the dimensions presented should be considered as the maximum that the final design will go up to, for example if 700 joint bays are referenced this means 'up to a maximum of 700 joint bays'.
67. The MDE is outlined in Chapter 3 Project Description (document reference 6.1.3) and the following parameters are supported by the following figure that can be found in ES Volume 2:
    - Figure 3.4 Indicative Onshore Infrastructure (document reference 6.2.3.4)
        - *This figure outlines the indicative infrastructure layers as well as associated IDs that have been assigned to each infrastructure element for reference throughout this chapter and the ES. Where an ID is relevant to this figure it is presented in square brackets e.g. [PCC-1].*

Table 5.1: Maximum Design Envelope for LVIA

Potential effect	Maximum Design Envelope assessed	Justification
Construction		
Landfall Landscape and Visual Effects	A landfall TCC known as the Landfall Compound [PCC-1] up to 70,000m^2 located to the west of Roman Bank and comprising up to six Transition Joint Bays (TJBs) each with a maximum area of 207m^2 and total area of 1,242m^2. A temporary Duct Storage Compound (40,000m^2) [SCC-2], where in the event of a pushdown installation (Chapter 3 Project	The MDE includes the maximum dimension of the Landfall Compound, Temporary Duct Storage Compound, noise bund and maximum number of TJBs, to represent the greatest area of land disturbance and visible construction activity.

Potential effect	Maximum Design Envelope assessed	Justification
	Description), the ducts for the landfall installation will be assembled and stored. Temporary access at the start of the construction phase and then permanent access during operation into the Landfall Compound will be taken from Roman Bank. A 4m high noise bund will be located between the Landfall Compound and Roman Bank.	
Onshore ECC and 400kV cable corridor Landscape and Visual Effects	The onshore ECC comprises a typically 80m working width, albeit that the corridor widens at landfall, major crossing locations and at the OnSS. The 400kV cable corridor is typically 60m working width. The corridors each comprise up to 12 cables divided between up to 4 circuits each set in a separate trench each 5m wide and of variable depth. The working width also includes in places a 6.8m wide haul road (up to 9m at passing places) and stockpiling areas associated with cable construction. The onshore ECC is approximately 70km in length and includes up to 680 joint bays, the 400kV cable corridor is approximately 4km in length and includes up to 20 joint bays Trenchless techniques will be deployed in 216 locations and the remainder of the onshore ECC will be constructed using open cut trenching.	The MDE includes the maximum width and, therefore, the greatest area of disturbance and visible construction activity. The assessment considers the 80m working width of the onshore ECC and the maximum 60m width of the 400kV cable corridor in relation to hedgerow and tree losses to ensure the worst case is being considered.
Onshore ECC and 400kV cable corridor Construction Compounds Landscape and Visual Effects	The land take for each of the Primary Construction Compounds (PCCs) will be up to 45,000m^2 and for Secondary Construction Compounds (SCCs) will be up to 4,800m^2. Up to 8 PCCs and 20 SCCs will be required across the onshore Order limits, see Chapter 3 (document reference 6.1.3) for further detail on locations. Where trenchless techniques are to be deployed Cable Installation Compounds (CICs) will be required to facilitate these works. There are 216 trenchless crossing locations in the Project's design basis with up to 321 CICs. CICs will be of variable size with a footprint of up to 4,000m^2.	The MDE includes the maximum dimensions and number of TCCs and, therefore, the greatest area of land disturbance and visible construction activity.

Potential effect	Maximum Design Envelope assessed	Justification
OnSS Construction activities Landscape and Visual Effects	An OnSS Primary Construction Compound (OnSS PCC) [PCC-29] with an area of up to 40,000m^2 to be located to the northeast and south of the OnSS. Once the OnSS PCC is reinstated, a portion (5,400m^2) of this area will be retained for an additional period of 15 months. Access route from the A16 at the Newlands Road junction, where there will be an OnSS Security & Logistics Compound [PCC-30]with a maximum footprint of 2,400 m^2. A permanent access road from Surfleet Bank into the OnSS will be up to 8m wide and designed to provide access throughout the operational life of the substation.	The MDE includes the maximum area of the construction compound and, therefore, the greatest area of land disturbance and visible construction activity.
OnSS Landscape and Visual Effects	GIS OnSS with a footprint of approximately 270m x 268.5m (72,600m^2) footprint and maximum height of buildings / equipment at 16.5m. AIS OnSS with a footprint of approximately 285m x 325m (144,000m^2) and maximum height of height of buildings / equipment at 13m.	The MDE is based on both the AIS OnSS and GIS OnSS, owing to the larger footprint of the AIS OnSS and the greater height of the GIS OnSS and construction of large enclosed buildings such that both represent the worst case scenario in respect of different receptors.
Construction lighting	Construction lighting will be required during working hours in the winter months, the lights of construction vehicles will also add to the levels of lighting and a lower level of lighting will remain overnight for security purposes.	The MDE considers maximum light levels used in the construction of the landfall, onshore ECC and OnSS.
Construction Period	Onshore construction activities will normally be carried out between 07.00 hours and 19.00 hours, Monday through Saturday with no Sunday or bank holiday working unless otherwise agreed with the local authority. Perimeter and site lighting would be required during working hours and a lower level of lighting would remain overnight for security purposes (See Outline Code of Construction Practice (CoCP) document 8.1). 51 months for landfall and OnSS. 42 months for onshore ECC and 400Kv cable corridor.	The MDE includes the maximum term over which the construction phase of the Project will give rise to effects.

Potential effect	Maximum Design Envelope assessed	Justification
Operation and Maintenance		
Onshore ECC, 400kV cable corridor and Landfall Landscape and Visual Effects	Link boxes (LBs) and earth pits (collectively referred to as LBs) will also be required along the Project onshore ECC. The LBs will require manhole-type covers to allow access for regular maintenance and fault-finding purposes. They may include above ground demarcation which may include fencing and marker posts. Link boxes will be required approximately every 450m (but could be up to to 2,000m) resulting in a maximum of 700 link boxes (including those at TJBs) each with dimensions of up to 18m^2 and 2.5m deep.	The MDE includes the maximum amount of visible above ground landfall, onshore ECC and 400kV cable corridor infrastructure.
OnSS Landscape and visual effects	GIS OnSS with a footprint of 270m x 268.5m (72,600m^2) and maximum height of buildings at16.5m and equipment at 13m. All other equipment, such as transformers and switchgear will not exceed a height of 16.5m above ground level. AIS OnSS with a footprint of 285m x 325m (144,000m^2) and maximum height of buildings / equipment at 13m. All other equipment, such as transformers and switchgear will not exceed a height of 13m above ground level. In respect of the GIS option, 30m tall lightning masts will be included. While these will form the tallest structures they are not included in the consideration of overall height owing to their slender design.	The MDE is based on both the AIS OnSS and GIS OnSS, owing to the larger footprint of the AIS OnSS and the greater height of the GIS OnSS and inclusion of large enclosed buildings such that both represent the worst case scenario in respect of different receptors. A 3D block model for the AIS and GIS options have been included in the visualisations on Figures 28.17 to 28.27 (document reference 6.2.28.17 to 6.2.28.27).
OnSS Operational Period	The operational life of the Project will be up to 35 years.	The MDE includes the maximum term over which the operational phase of the Project will give rise to effects.
Decommissioning		
Onshore ECC,400kV cable corridor and Landfall Landscape	Decommissioning could lead to adverse impacts as identified for the construction phase, although these are anticipated to be more isolated and infrequent, given it is anticipated that the majority of infrastructure will be left in-situ.	Effects would relate principally to the decommissioning process, associated plant, materials, infrastructure and temporary structures, as well as the presence of dismantled

Potential effect	Maximum Design Envelope assessed	Justification
and Visual Effects	An onshore decommissioning plan will be developed providing further details on the decommissioning of the onshore elements of the Project in accordance with the onshore decommissioning requirement of the DCO	structures, where they would be visible above ground.
OnSS Landscape and Visual Effects	Removal of the OnSS.	Effects would relate principally to the decommissioning process, associated plant, and materials to remove the OnSS.
Cumulative Effects		
Cumulative Landscape and visual effects	The LVIA considers the potential for significant cumulative effects to arise as a result of the addition of the Project in the context of other large-scale developments that are consented or at application or pre-application stage, that are located or proposed within the onshore LVIA study area.	Cumulative landscape and visual effects are not considered to arise as a result of other development outwith the LVIA study area.

5.3 Embedded Mitigation

68. 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 LVIA are set out in the following sections. The mitigation includes embedded measures such as design changes and applied mitigation which is subject to further study or approval of details; these include avoidance measures that will be informed by pre-construction surveys, and necessary additional consents where relevant. The composite of embedded and applied mitigation measures apply to all parts of the Project development works, including pre-construction, construction, operation and maintenance and decommissioning.

5.3.1 Primary Embedded Mitigation

69. Primary Embedded mitigation in respect of the onshore elements of the Project has involved the sensitive siting and design of the landfall, onshore ECC, 400kV cable corridor and OnSS, to ensure the potential impacts are avoided or reduced.

70. The site selection process considered a range of environmental and technical constraints, including ensuring a good separation from settlement and rural properties, avoiding landscape elements, such as woodlands, trees and hedgerows, and considering issues such as surface water flooding. The sensitivity of the surrounding landscape and of residents, road-users, workers and recreational users of the landscape was also a key consideration.

71. The capacity of the landscape to accommodate the onshore elements of the Project is assessed in relation to the natural screening afforded by landform, woodlands and trees and the degree to which other surrounding infrastructure and buildings influence visual screening. As screening

is limited in this landscape, especially in respect of the Surfleet Marsh OnSS the approach has been to locate the onshore ECC, 400kV cable corridor and the OnSS as far detached as possible from nearby settlements primarily, but also from roads and PRoWs.

72. The close proximity of existing electricity overhead lines to the Surfleet Marsh OnSS provides a context of electrical infrastructure across the local and wider landscapes. There is also a more distant influence from the Spalding Energy Facility, located to the south of the Surfleet Marsh OnSS. This context was considered in site selection and aligning with it is also considered to be embedded mitigation.
73. 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 the LVIA are presented below.

5.4 Construction Phase Mitigation

74. Mitigation opportunities during the construction phase of works will be limited and primarily relate to the restrictions imposed on the working areas and measures identified in the CoCP which will be drafted in accordance with the Outline Code of Construction Practice (CoCP) document 8.1) submitted alongside this ES.
75. The OLEMS (document reference 8.10) sets out the principles and key landscape and ecology elements for the onshore elements of the Project. The OLEMS and Outline CoCP seek to stipulate measures to avoid, reduce or offset environmental effects of the construction works, including those related to landscape elements, landscape character and visual amenity. Since PEIR, the selection of a single option for the landfall and OnSS and the detailed routing of a single option for the onshore ECC, has meant that more detailed mitigation measures have been developed. Sensitive siting of construction compound areas associated with the landfall, onshore ECC, 400kV cable corridor and the OnSS, away from more visible and larger numbers of receptors, has also been important in reducing the impact on landscape elements and visual amenity.

5.5 Onshore Substation (OnSS) Mitigation

76. An indicative mitigation planting plan has been developed for the OnSS, as set out in the OLEMS (document reference 8.10). These mitigation proposals include shelterbelts of woodland, hedgerows, and areas of grassland. The extent of the indicative mitigation planting is presented on Figure 28.15 (document reference 6.2.28.15) and is also shown at the predicted height after 15 years' growth on the LVIA visualisations on Figures 28.17 to 28.27 (document reference 6.2.28.17 to 6.2.28.27).
77. The indicative woodland and hedgerows mostly comprise native woodland species and will be located around the OnSS and along field boundaries in the surrounding landscape. The mitigation woodland planting will be designed to comprise a mix of faster growing 'nurse' species and slower growing 'core' species. Nurse species, such as alder, birch, and black poplar

will grow quicker so that after 15 years they will be approximately 6.8 to 8.3m in height. They will provide shelter to bring on core species, such as oak, elm and sycamore. Whilst the nurse species will be sufficiently fast growing to provide partial screening of the OnSS after 15 years, the core species will outlive the nurse species and provide a preferred native woodland with a more robust structure closer in character to other woodlands associated with the Lincolnshire landscape.

78. In locations where it is possible to undertake planting that will not interfere with construction works and where practical to do so, mitigation woodland could be planted during the early phases of the OnSS construction to ensure robust screening as quickly as possible. If implemented at the start of the construction phase, this woodland planting will give these areas additional growth prior to completion of construction and commencement of operation of the OnSS.
79. Depending on the final design and size of the OnSS, earthworks used to create the OnSS platform may result in surplus soil and excavation material. If available, this could potentially be used in the creation of landscape bunding in areas of proposed woodland within the sites. This will further limit views of the OnSS and provide further landscape and visual mitigation.
80. In order to ensure a worst case scenario is being represented in this assessment, the inclusion of advanced planting and the raising of planting through the use of earth bunds is not considered.

5.5.1 Cable Route and Landfall Mitigation

81. The onshore ECC and 400kV cable corridor presented in the PEIR, set out a 300m wide study area and for the ES this has been refined down to an 80m working width and a 60m permanent corridor. This process involved the careful siting of the route to ensure a good separation distance from settlements and rural properties. Furthermore, the design of the onshore ECC and 400kV cable corridor includes approximately 216 locations along the approximate 70km route, where trenchless techniques will be used, thus avoiding the physical and visual effects associated with open cut trenching across a substantial length of the route.
82. The landscape mitigation strategy for the onshore ECC and 400kV cable corridor has helped in the refinement of the route and in identifying where trenchless techniques are required to avoid sensitive landscape features such as woodlands and hedgerows. The landscape and visual strategy is as follows:

- Achievement of the best environmental fit of the 80m working width cable route where practicable, particularly in relation to maintaining separation from settlement and rural properties;
- Locating trenchless techniques to reduce the loss of hedgerows, trees and woodland along the cable route;
- Reinstatement of removed sections of hedgerows, or suitable replacement hedgerows provided for displaced or severed sections of hedgerows where practical;

- Sensitive siting of TCCs such that the locations have been carefully selected taking into account landscape and visual receptors to reduce impacts during the construction period where practicable;
- Restoration of all temporary works and construction areas in relation to re-establishment of ground cover;
- Protection of all retained trees during the construction phase where practicable; and
- Footpaths or cycleways that are temporarily disrupted by the proposed onshore ECC, 400kV cable corridor or landfall will be temporarily diverted and then reinstated as part of the mitigation strategy.

83. Following construction of the landfall and installation of the onshore ECC and 400kV cable corridor, disturbed landcover and habitats will be reinstated. The overall aim of the reinstatement will be the re-establishment of existing ground cover or returning the disturbed ground to its original agricultural use. Where possible, excavated soils will be carefully stored and reinstated as soon as possible.

6 Assessment Methodology

6.1 Introduction

6.1.1 Types of Effect

84. The LVIA predicts, describes and assesses the likely significant effects that the Project will have on the landscape and visual resource, and covers the following types of effect which may arise during construction, decommissioning or operation of the onshore elements of the Project.

6.1.1.1 Landscape Effects

85. Landscape effects potentially arise from the introduction of new onshore elements which may be visible and may therefore affect the perceived character of the landscape. This may also include effects on designated landscapes.

86. GLVIA 3, paragraph 5.4, advises that Landscape Character Assessment should be regarded as the main source for baseline studies and identifies the following factors which combine to create areas of distinct landscape character:

"the elements that make up the landscape in the study area including:

physical influences - geology, soils, landform, drainage and water bodies;

landcover, including different types of the vegetation and patterns and types of tree cover; and

the influence of human activity, including land use and management, the character of settlements and buildings, and pattern and type of fields and enclosure.

The aesthetic and perceptual aspects of the landscape - such as, for example, its scale, complexity, openness, tranquillity or wildness;

The overall character of the landscape in the study area, including any distinctive Landscape Character Types or Areas that can be identified, and the particular combinations of elements and aesthetic and perceptual aspects that make each distinctive, usually by identification as key characteristics of the landscape."

6.1.1.2 Visual Effects

87. Visual effects potentially arise from the introduction of onshore elements in views and the resultant effects on visual amenity experienced by people from representative viewpoints and principal visual receptors, for example groups of people, such as within settlements, using transport routes or recreational trails.

6.1.1.3 Cumulative Effects

88. In addition to the above, cumulative effects may arise where the study areas for two or more projects overlap so that they are experienced at a proximity where they may have a greater incremental effect, or where projects may combine to have a sequential effect. The LVIA assesses the cumulative effects that would arise through the development of the Project.

6.2 Field Survey

89. Field survey work was undertaken during periods of clear visibility in October and November 2022, and September and October 2023, and carried out from publicly accessible locations throughout the LVIA study area.
90. For the OnSS, the focus of the field survey was on the baseline character of the local landscape and its susceptibility to the change that the OnSS will introduce, as well as the visual amenity of local residents, walkers and road-users and how their views could be affected. For the proposed onshore ECC, 400kV cable corridor and landfall, the focus of the field survey was on those physical elements of the landscape that will be physically affected during the construction phase. Consideration was also given to the visual effects on visual receptors in the 1km onshore ECC and 400kV cable corridor study area that could arise as a result of changes to the physical elements. The field survey allows the assessors to judge the likely scale, distance, extent and prominence of the onshore elements of the Project directly.
91. The landscape of the area surrounding the proposed onshore elements of the Project has been assessed for any particular features that contribute to landscape character or that are important to the wider landscape setting. The field surveys provided an experience of the character areas of the onshore LVIA study areas and the verification of how these areas might be affected by the onshore elements of the Project.The visual amenity of the onshore LVIA study area was surveyed from receptors representative of the range of views and viewer types likely to experience the onshore elements of the Project. Views from a variety of distances, aspects, elevations and extents are included.

6.3 Guidance

92. Guidance relevant to the LVIA is set out in the following documents:
    - Landscape Institute and IEMA (2013) - Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3);
    - Natural England (2014). An Approach to Landscape Character Assessment;
    - Planning Inspectorate (2018) Advice Note Nine: Rochdale Envelope;
    - Planning Inspectorate (2019). Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects;
    - NatureScot (2021). Assessing the Cumulative Impact of Onshore Wind Energy Developments;
    - Landscape Institute (2019). Visual Representation of Development Proposals; and
    - NatureScot (2017) - Visual Representation of Windfarms, Guidance (Version 2.2) (herein referred to as 'NatureScot Visual Representation').
93. Although some of this guidance is from publications by bodies located in other UK nations it is commonly drawn on for work carried out in England where no equivalent guidance exists. The preparation of visual representations accord with the Landscape Institute's Visual

Representation guidance and this has been agreed with stakeholders as part of the LVIA ETGs.

6.4 Approach to Assessment

94. The LVIA is undertaken using the following steps:

- The features of the onshore elements of the Project that may result in landscape and visual effects are described;
- The overall scope of the assessment is defined, including the study area and range of possible landscape and visual effects;
- The landscape baseline is established using landscape character assessment and the ZTV maps, to identify landscape receptors that may be affected and their key characteristics and value;
- The visual baseline is established by identifying the extent of possible visibility, identifying the people who may be affected, identifying visual receptors and selecting viewpoints;
- A preliminary assessment is undertaken of landscape and visual receptors using ZTV analysis, to identify which landscape and visual receptors are unlikely to be significantly affected and those that are more likely to be significantly affected, which require to be assessed in more detail;
- Interactions are identified between the proposed onshore elements of the Project and landscape and visual receptors, to predict potentially significant effects arising and measures are proposed to mitigate effects;
- An assessment of the susceptibility of landscape and visual receptors to specific change and the value attached to landscape receptors and views is undertaken, combining these judgements to assess the sensitivity of the landscape and visual receptor to the proposed onshore elements of the Project;
- An assessment of the size/ scale of the landscape effect, the degree to which landscape elements are altered and the extent to which the effects change the key characteristics of the landscape is undertaken, combining these judgements to assess the magnitude of change on the landscape receptor;
- An assessment of the size/ scale of the visual effect, the extent to which the change will affect views, whether this is unique or representative of a wider area, and the position of the proposed onshore elements of the Project in relation to the principal orientation of the view and activity of the receptor. These judgements are combined to assess the magnitude of change on the visual receptor; and
- The assessments of sensitivity to change and magnitude of change are combined to assess the significance of landscape and visual effects.

95. GLVIA3 sets out an approach to the assessment of magnitude of change in which three separate considerations are combined within the magnitude of change rating. These are the size or scale of the effect, its geographical extent and its duration and reversibility. Notably GLVIA3 is not a prescriptive methodology but guidance. The guidance suggests that this approach is to be

applied in respect of both landscape and visual receptors. It is considered that the process of combining all three considerations in one rating can distort the aim of identifying likely significant effects of development. For example, a high magnitude of change, based on size or scale, may be reduced to a lower rating if it occurred in a localised geographical area and for a short duration. This might mean that a potentially significant effect will be overlooked if effects are diluted down due to their limited geographical extents and/ or duration or reversibility.

96. As advocated by GLVIA3 the assessment has used professional judgement in defining the methodology for the LVIA. The consideration of the size or scale of the effect, its geographical extent and its duration and reversibility has therefore been undertaken separately, by basing the magnitude of change on size or scale to determine where significant and not significant effects occur, and then describing the geographical extents of these effects and their duration and reversibility separately. Duration and reversibility are stated separately in relation to the assessed effects (for example as short/medium/long-term and temporary/permanent) and are considered as part of drawing conclusions about likely 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.
97. The assessment methodology utilises six scales of magnitude of change - high, medium-high, medium, medium-low, low and negligible/none; which are preferred to the 'maximum of five categories' suggested in GLVIA3 as a means of clearly defining and summarising magnitude of change judgements, as the six scales present more options to describe the magnitude of change.

6.4.1 Defining Impact Significance – Landscape

6.4.1.1 Sensitivity of the Landscape Receptor

The sensitivity of a landscape character receptor is a combination of the judgements made about the value associated with that receptor and the susceptibility of the receptor to the development proposed.

6.4.1.2 Value of the Landscape Receptor

98. The value of a landscape character receptor is a reflection of the value that society attaches to that landscape. The assessment of the landscape value is classified as high, medium-high, medium, medium-low or low and the basis for this assessment is made clear using evidence and professional judgement, based on the following range of factors.

- Landscape designations - A receptor that lies within the boundary of a recognised landscape related planning designation is of increased value, depending on the proportion of the receptor that is affected and the level of importance of the designation which may be international, national, regional or local. The absence of designations does not however preclude value, as an undesignated landscape character receptor may be valued as a resource in the local or immediate environment.

- Landscape quality - The quality of a landscape character receptor is a reflection of its attributes, such as scenic quality, sense of place, rarity and representativeness and the extent to which its valued attributes have remained intact. A landscape with consistent, intact, well-defined and distinctive attributes is considered to be of higher quality and, in turn, higher value, than a landscape where the introduction of elements has detracted from its character.
- Landscape experience - The experiential qualities that can be evoked by a landscape receptor can add to its value and relates to a number of factors including:
    - the perceptual responses it evokes;
    - the cultural associations that may exist in literature or history, or the iconic status of the landscape in its own right;
    - the recreational value of the landscape; and
    - the contribution of other values relating to the nature conservation or archaeology of the area.

6.4.1.3 Landscape Susceptibility to Change

99. The susceptibility of a landscape character receptor to change is a reflection of its ability to accommodate the changes that will occur as a result of the addition of the proposed development. Some landscape receptors are better able to accommodate change as a result of the development than others due to certain characteristics that are indicative of capacity to accommodate change. These characteristics may or may not also be special landscape qualities that underpin designated landscapes.

100. The assessment of the susceptibility of the landscape receptor to change is classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement. The following indicators of landscape susceptibility are considered in the context of the development proposed:

- Overall strength and robustness: Collectively the overall characteristics and qualities of a particular landscape result in a strong and robust landscape that is capable of reasonably accommodating the influence of the onshore elements of the Project without undue adverse effects on the special landscape qualities (in the case of a designated landscape) or the key characteristics.
- Landscape scale and topography: The scale and topography are large enough to physically accommodate the influence of the onshore elements of the Project. Topographical features such as more complex, distinctive or small-scale coastal landforms are likely to be more susceptible than simple, broad and homogenous coastal landforms.
- Openness and enclosure: Openness in the landscape may increase susceptibility to change because it can result in wider visibility, however an open landscape may also be larger scale and simple, which would decrease susceptibility. Conversely, enclosed landscapes can offer more screening potential, limiting visibility to a smaller area, however they may also be smaller scale and more complex which would increase susceptibility.

- Skyline: Prominent and distinctive skylines and horizons with important landmark features that are identified in the landscape character assessment, are generally considered to be more susceptible to development in comparison to broad, simple skylines which lack landmark features or contain other infrastructure features.
- Relationship with other development and landmarks: Contemporary landscapes where there are existing similar developments or other forms of development (industry, mineral extraction, masts, urban fringe / large settlement, major transport routes) that already have a characterising influence result in a lower susceptibility to development in comparison to areas characterised by limited development or smaller scale, historic development and landmarks.
- Perceptual qualities: Notable landscapes that are acknowledged to be particularly scenic, wild or tranquil are generally considered to be more susceptible to development in comparison to ordinary, cultivated or farmed / developed landscapes where perceptions of 'wildness' and tranquillity are less tangible. Landscapes which are either remote or appear natural may vary in their susceptibility to development.
- Landscape context and association: the extent to which the onshore elements of the Project will influence the character of landscape receptors across the study area relates to the associations that exist between the landscape receptor within which the onshore elements of the Project are located and the landscape receptor from which the onshore elements of the Project are experienced. In some situations, this association is strong, where the landscapes are directly related, and in other situations weak, where the landscape association is weak. The context and visual connection to areas of adjacent landscape character or designations has a bearing on the susceptibility to development.

6.4.1.4 Landscape Sensitivity Rating

101. An overall sensitivity assessment of the landscape receptor is made by combining the assessment of the value of the landscape character receptor and its susceptibility to change. The evaluation of landscape sensitivity has been applied for each landscape receptor - high, medium-high, medium, medium-low and low - by combining individual assessments of the value of the receptor and its susceptibility to change.

6.4.2 Landscape Magnitude of Change

102. The magnitude of change affecting landscape receptors is an expression of the scale of the change that will result from the onshore elements of the Project and is dependent on a number of variables regarding the size or scale of the change and the geographical extent over which the change will be experienced.

6.4.2.1 Size or Scale of Change

103. This criterion relates to the size or scale of change to the landscape that will arise as a result of the onshore elements of the Project, based on the following factors.

- Landscape elements: The degree to which the pattern of elements that makes up the landscape character is altered by the onshore elements of the Project, by removal or addition of elements in the landscape. The magnitude of change will generally be higher if the features that make up the landscape character are extensively removed or altered, and/or if many new elements are added to the landscape.
- Landscape characteristics: The extent to which the effect of the onshore elements of the Project changes, physically or perceptually, the key characteristics of the landscape that may be important to its distinctive character. This may include, for example, the scale of the landform, its relative simplicity or irregularity, the nature of the landscape context, the grain or orientation of the landscape, the degree to which the receptor is influenced by external features and the juxtaposition of the onshore elements of the Project in relation to these key characteristics. If the onshore elements of the Project are located in a landscape receptor that is already affected by other similar development, this may reduce the magnitude of change, particularly if there is a high level of integration and the developments form a unified and cohesive feature in the landscape.
- Landscape designation: In the case of designated landscapes, the degree of change is considered in light of the effects on the special landscape qualities which underpin the designation and the effect on the integrity of the designation. All landscapes change over time and much of that change is managed or planned. Often landscapes will have management objectives for 'protection' or 'accommodation' of development. The scale of change may be localised, or occurring over parts of an area, or more widespread affecting whole landscape receptors and their overall integrity.
- Distance: The size and scale of change is also strongly influenced by the proximity of the onshore elements of the Project to the receptor. Distance may be an influential factor to the extent that over a long range the scale of the influence on landscape receptors may be small or very limited. Conversely, landscapes closest to the development are likely to be most affected. Where the development is located within a 'host' landscape character area this will be directly affected whilst adjacent areas of landscape character will be indirectly affected.
- Amount and nature of change: The amount of the onshore elements of the Project that is seen. Generally, the greater the amount of the onshore elements of the Project that can be seen, the higher the scale of change. Generally, the magnitude of change is likely to be lower where the Project is largely perceived to be at a distance, rather than 'within' the landscape being considered.

6.4.2.2 Geographical Extent

104. The geographic extent over which the landscape effects are 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 non-significant effects.

105. The extent of the effects will vary depending on the specific nature of the onshore elements of the Project and is principally assessed through analysis of the extent of perceived

changes to the landscape character through visibility of the onshore elements of the Project.

6.4.2.3 Duration and Reversibility

106. The duration and reversibility of landscape effects is based on the period over which onshore elements of the Project are likely to exist (during construction and operation) and the extent to which these elements are removed (during decommissioning) and its effects reversed at the end of that period. Long-term, medium-term, and short-term landscape effects are defined as follows:

- Long-term - more than 10 years (may be defined as permanent or reversible);
- Medium-term - 5 to 10 years; and
- Short-term - up to 5 years.

107. While these definitions are not set out in guidance, they form part of OPEN's standard methodology and have been applied in the LVIAs and SLVIAs for other NSIPs, including East Anglia 1 North, East Anglia 2 and Awel Y Mor.

6.4.2.4 Landscape Magnitude of Change Rating

108. The 'magnitude' or 'degree of change' resulting from the onshore elements of the Project is described as 'High', 'High-medium', 'Medium', 'Medium-low' 'Low' or 'Negligible'. In assessing magnitude of change, the assessment focuses on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects, for example as short / medium / long-term and temporary / permanent.

6.4.3 Evaluating Landscape Effects and Significance

109. The level of landscape effect is evaluated primarily through the combination of landscape sensitivity and magnitude of change. Once the level of effect has been assessed, a judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the EIA Regulations. This process is assisted by the matrix in Table 6.1: Matrix Used to Guide Determination of Effect Significance, which is used to guide the assessment. Geographical extent and duration and reversibility are considered relevant in 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.

110. Further information is also provided about the nature of the effects, whether these will be direct or indirect; temporary, permanent or reversible; beneficial, neutral or adverse, and cumulative.

111. A significant effect occurs where the combination of the variables results in the onshore elements of the Project having a defining effect on the landscape receptor, or where changes of a lower magnitude affect a landscape receptor that is of particularly high sensitivity. A major loss or irreversible effect over an extensive area or landscape character, affecting landscape elements, characteristics and / or perceptual aspects that are key to a nationally valued landscape are likely to be significant, particularly if they are of long duration and irreversible.

112. A non-significant effect will occur where the effect of the onshore elements of the Project is not defining, and the landscape character of the receptor continues to be characterised principally by its baseline characteristics. Equally a small-scale change experienced by a receptor of high sensitivity may not significantly affect the special landscape quality or integrity of a designation. Reversible effects, on elements, characteristics and character that are of small-scale or geographical extent or affecting lower value receptors, are unlikely to be significant.

6.5 Defining Impact Significance - Visual

113. Visual Effects are concerned wholly with the effect of the onshore elements of the Project on views, and the general visual amenity. Visual Effects are defined by the Landscape Institute in GLVIA 3, paragraph 6.1 as follows:

"An assessment of visual effects deals with the effects of change and development on views available to people and their visual amenity. The concern ... is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views."

114. Visual effects are identified for different receptors (people) who will experience the view at their place of residence, within their community, during recreational activities, at work, or when travelling through the area. The visual effects may include the following:

- Visual effect: a change to an existing static view, sequential views, or wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view;
- Cumulative visual effects: the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect.

115. The level of visual effect (and whether this is significant) is determined through consideration of the sensitivity of the visual receptor and their view and the magnitude of change that will be brought about by the onshore elements of the Project.

6.5.1 Zone of Theoretical Visibility (ZTV)

116. Plans mapping the ZTV are used to analyse the extent of theoretical visibility of the OnSS. The ZTVs provide a starting point in the assessment process and tend towards giving a 'worst case' or greatest calculation of the theoretical visibility. ZTV production for the LVIA, including limitations, is described at the end of this section 6.

6.5.1.1 Viewpoint Analysis

117. Viewpoint analysis is used to assist the assessment and is conducted from selected viewpoints within the study area. The purpose of this is to assess both the level of visual effect for particular receptors and to help guide the design process and focus of the assessment. A range of viewpoints are examined in detail and analysed to determine whether a significant visual effect will occur.

118. The assessment involves visiting the viewpoint location and viewing visualisations

prepared for each viewpoint location. The fieldwork is generally conducted in periods of fine weather with good visibility and considers seasonal changes such as reduced leaf cover or hedgerow maintenance. The viewpoint analysis is used to assist in the assessment of effects on visual receptor locations as well as landscape character effects reported in the LVIA.

6.5.2 Evaluating Visual Sensitivity to Change

119. In accordance with paragraphs 6.31 to 6.37 of GLVIA3, the sensitivity of visual receptors is determined by a combination of the value of the view and the susceptibility of the visual receptors to the change likely to result from the onshore elements of the Project on the view and visual amenity.

6.5.2.1 Value of the View

120. The value of a view or series of views reflects the recognition and the importance attached either formally through identification on mapping or being subject to planning designations, or informally through the value which society attaches to the view(s). The value of a view has been classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement, based on the following criteria.

- Formal recognition - The value of views can be formally recognised through their identification on OS or tourist maps as formal viewpoints, sign-posted and with facilities provided to add to the enjoyment of the viewpoint such as parking, seating and interpretation boards. Specific views may be afforded protection in local planning policy and recognised as valued views. Specific views can also be cited as being of importance in relation to landscape or heritage planning designations, for example the value of a view has been increased if it presents an important vista from a designed landscape or lies within or overlooks a designated area, which implies a greater value to the visible landscape.
- Informal recognition - Views that are well-known at a local level and/or have particular scenic qualities can have an increased value, even if there is no formal recognition or designation. Views or viewpoints are sometimes informally recognised through references in art or literature, and this can also add to their value. A viewpoint that is visited or appreciated by a large number of people will generally have greater importance than one gained by very few people.

6.5.2.2 Susceptibility to Change

121. Susceptibility relates to the nature of the viewer experiencing the view and how susceptible they are to the potential effects of the onshore elements of the Project. A judgement to determine the level of susceptibility therefore relates to the nature of the viewer and their experience from that particular viewpoint or series of viewpoints, classified as high, medium-high, medium, medium-low or low and based on the following criteria:

- Nature of the viewer - The nature of the viewer is defined by the occupation or activity of the viewer at the viewpoint or series of viewpoints. The most common groups of viewers considered in the visual assessment include residents, motorists, and people taking part in recreational activity or working. Viewers, whose attention is focused on the landscape, or with static long-term views, are likely to have a higher susceptibility. Viewers travelling in cars or on trains will tend to have a lower susceptibility as their view is transient and moving. The least sensitive viewers are usually people at their place of work as they are generally less susceptible to changes in views.
- Experience of the viewer - The experience of the visual receptor relates to the extent to which the viewer's attention or interest may be focused on the view and the visual amenity they experience at a particular location. The susceptibility of the viewer to change arising from the onshore elements of the Project may be influenced by the viewer's attention or interest in the view, which may be focused in a particular direction, from a static or transitory position, over a long or short duration, and with high or low clarity. For example, if the principal outlook from a settlement is aligned directly towards the onshore elements of the Project, the experience of the visual receptor is altered more notably than if the experience relates to a glimpsed view seen at an oblique angle from a car travelling at high speed. The visual amenity experienced by the viewer varies depending on the presence and relationship of visible elements, features or patterns experienced in the view and the degree to which the landscape in the view may accommodate the influence of the onshore elements of the Project.

6.5.2.3 Visual Sensitivity Rating

122. An overall level of sensitivity is applied for each visual receptor or view - high, medium-high, medium, medium-low or low by combining individual assessments of the value of the view and the susceptibility of the visual receptor to change. Each visual receptor, meaning the particular person or group of people likely to be affected at a specific viewpoint, is assessed in terms of their sensitivity.

6.5.3 Visual Magnitude of Change

123. The visual magnitude of change is an expression of the scale of the change that will result from the onshore elements of the Project and is dependent on a number of variables regarding the size or scale of the change and the geographical extent over which the change will be experienced. A separate assessment is also made of the duration and reversibility of visual effects.

6.5.3.1 Size or Scale of Change

124. An assessment is made regarding the size or scale of change in the view that is likely to be experienced as a result of the onshore elements of the Project, based on the following criteria:

- Distance: the distance between the visual receptor/viewpoint and the onshore elements of the Project. Generally, the greater the distance, the lower the magnitude of change, as the onshore elements of the Project will constitute a smaller scale component of the view.

- Size: the amount and size of the onshore elements of the Project that is seen. Visibility may range from small or partial visibility of the onshore elements of the Project, to all of the onshore elements being visible. Generally, the larger and greater number of the onshore elements of the Project that appear in the view, the higher the magnitude of change. This is also related to the degree to which the onshore elements of the Project may be wholly or partly screened by landform, the vegetation (seasonal) and / or built form. Conversely open views are likely to reveal more of the onshore elements of the Project, particularly where this is a key characteristic of the landscape context.
- Scale: the scale of the change in the view, with respect to the loss or addition of features in the view and changes in its composition. The scale of the onshore elements of the Project may appear larger or smaller relative to the scale of the receiving landscape.
- Field of view: the vertical / horizontal field of view (FoV) and the proportion of the view that is affected by the onshore elements of the Project. Generally, the more of the proportion of a view that is affected, the higher the magnitude of change. If the onshore elements of the Project extend across the whole of the open part of the outlook, the magnitude of change is higher as the full view has been affected. Conversely, if the onshore elements of the Project cover just a narrow part of an open, expansive and wide view, the magnitude of change is likely to be reduced as it will not affect the whole open part of the outlook. This can in part be described objectively by reference to the horizontal / vertical FoV affected, relative to the extent and proportion of the available view.
- Contrast: the character and context within which the onshore elements of the Project are seen and the degree of contrast or integration of any new features with existing landscape elements, in terms of scale, form, mass, line, height, colour, luminance and motion. Developments which contrast or appear incongruous in terms of colour, scale and form are likely to be more visible and have a higher magnitude of change.
- Consistency of image: the consistency of image of the onshore elements of the Project in relation to other developments. The magnitude of change of onshore elements of the Project is likely to be lower if its layout design is broadly similar to other developments in the landscape, in terms of its scale, form and general appearance. New development is more likely to appear as logical components of the landscape with a strong rationale for their location.
- Skyline / background: Whether the onshore elements of the Project will be viewed against the skyline or a background landscape may affect the level of contrast and magnitude. If the onshore elements of the Project add to an already developed skyline the magnitude of change will tend to be lower.
- Number: generally, the greater the number of separate onshore elements of the Project seen simultaneously or sequentially, the higher the magnitude of change. Further effects will occur in the case of separate developments and their spatial relationship to each other will affect the magnitude of change. For example, development that appears as an extension to an existing development will tend to result in a lower magnitude of change than a separate, new development.

- Nature of visibility: the nature of visibility is a further factor for consideration. The onshore elements of the Project may be subject to various phases of development change and the manner in which the onshore elements of the Project may be viewed could be intermittent or continuous and / or vary seasonally, due to periodic management or leaf fall.

6.5.3.2 Geographical Extent

125. The geographic extent over which the visual effect has been experienced is also assessed, which is distinct from the size or scale of effect and is described in terms of the physical area or location over which it is experienced (described as a linear or area measurement). The extent of the effects varies according to the specific nature of the onshore elements of the Project and is principally assessed through ZTV, field survey and viewpoint analysis of the extent of visibility likely to be experienced by visual receptors.

6.5.3.3 Duration and Reversibility

126. The duration and reversibility of visual effects are based on the period over which the onshore elements of the Project are likely to exist (during construction and operation) and the extent to which the onshore elements of the Project are removed (during decommissioning) and the effects reversed at the end of that period.

- Long-term, medium-term and short-term visual effects are defined as follows:
- Long-term - more than 10 years (may be defined as permanent or reversible);
- Medium-term – 5 to 10 years; and
- Short-term - up to 5 years.

127. While these definitions are not set out in guidance, they form part of OPEN's standard methodology and have been applied in the LVIAs and SLVIAs for other NSIPs, including East Anglia 1 North, East Anglia 2 and Awel Y Mor.

6.5.3.4 Visual Magnitude of Change Rating

128. The 'magnitude' or 'degree of change' resulting from the onshore elements of the Project is described as 'High', 'High-medium', 'Medium', 'Medium-low' 'Low' and 'Negligible'. In assessing the magnitude of change the assessment focuses on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects, for example as short, medium or long-term and temporary or permanent. The basis for the assessment of magnitude for each receptor is made clear using evidence and professional judgement.

6.5.3.5 Evaluating Visual Significance and Ratings

129. The level of visual effect is evaluated through the combination of visual sensitivity and magnitude of change. Once the level of effect has been assessed, a professional judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the relevant EIA Regulations. This process is assisted by the matrix in Table 6.1 which is used to guide the assessment. Geographical extent and duration and reversibility 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.

130. Further information is also provided about the nature of the effects (whether these will be direct or indirect; temporary, permanent, or reversible; beneficial, neutral or adverse, and cumulative).

131. A significant effect is more likely to occur where a combination of the variables results in the onshore elements of the Project having a defining effect on the view or visual amenity or where changes affect a visual receptor that is of high sensitivity.

132. A non-significant effect is more likely to occur where a combination of the variables results in the onshore elements of the Project having a non-defining effect on the view or visual amenity or where changes affect a visual receptor that is of low sensitivity.

6.6 Defining Impact Significance – Cumulative Landscape and Cumulative Visual

133. NatureScot's guidance, Assessing the Cumulative Impact of Onshore Wind Energy Developments (2021) is widely used across the UK to inform the specific assessment of the cumulative landscape and visual effects of different types of development. Both GLVIA3 and NatureScot's guidance provide the basis for the methodology for the cumulative LVIA. The NatureScot (2021) guidance defines:

"The purpose of a Cumulative Landscape and Visual Impact Assessment (CLVIA) is to describe, visually represent and assess the ways in which a proposed windfarm would have additional impacts when considered with other consented or proposed windfarms. It should identify the significant cumulative impacts arising from the proposed windfarm."

The assessment should be proportionate to the likely impacts and all CLVIA should accord with the guidelines within GLVIA3. The emphasis should be on the production of relevant and useful information, highlighting why the proposals assessed have been included and why others have been excluded, rather than the provision of a large volume of information." (NatureScot 2021, p8);

"Cumulative landscape impacts can change either the physical fabric of character of the landscape, or any special values attached to it" (NatureScot 2021, p7); and

"Cumulative impacts on visual amenity can be caused by 'combined visibility' and/or 'sequential impacts." (NatureScot 2021, p7).

134. In line with this guidance therefore, the objective of the cumulative assessment is different from the assessment of effects of the Project itself. In the cumulative assessment the intention is to establish whether or not the addition of the Project, in combination with other relevant consented or proposed developments, may lead to a significant cumulative landscape or visual effect.

6.7 Evaluation of Significance

135. The matrix presented in Table 6.1 is used as a guide to help inform the threshold of significance when combining sensitivity and magnitude to assess significance. On this basis potential effects are assessed as Negligible, Minor, Moderate-Minor, Moderate, Moderate-Major and Major. In those instances where the magnitude has been assessed as 'no change', the level of effect is recorded as ‘No effect’.

136. For the purposes of this assessment, any effects with a significance level of Major and Moderate-Major have been deemed significant in EIA terms (dark turquoise shaded boxes in Table 6.1). 'Moderate' levels of effect have the potential, subject to the assessor's professional judgement, to be considered as significant or not significant, depending on the sensitivity and magnitude of change factors evaluated (turquoise shaded boxes in Table 6.1). These assessments are explained as part of the assessment, where they occur. Significance can therefore occur at a range of levels depending on the magnitude and sensitivity, however in all cases, a significant effect is considered more likely to occur where a combination of the variables results in the onshore elements of the Project having a defining effect on the landscape character or view. Definitions are not provided for the individual categories of significance shown in the matrix and the reader should refer to the detailed definitions provided for the factors that combine to inform sensitivity and magnitude.

137. Effects assessed as being either Moderate-Minor, Minor or Negligible level are assessed as not-significant (grey shaded boxes in Table 6.1).

Table 6.1: Matrix Used to Guide Determination of Effect Significance

		Magnitude of change					
		High	Medium-high	Medium	Medium-5low	Low	Negligible
Sensitivity of receptor	High	Major (Significant)	Major (Significant)	Major - Moderate (Significant)	Moderate (Significant or Not significant)	Moderate - Minor (Not Significant)	Minor (Not significant)
	Medium-high	Major (Significant)	Major - Moderate (Significant)	Moderate (Significant or Not significant)	Moderate (Significant or Not significant)	Moderate - Minor (Not Significant)	Minor (Not significant)
	Medium	Major - Moderate (Significant)	Moderate (Significant or Not significant)	Moderate (Significant or Not significant)	Moderate - Minor (Not Significant)	Minor (Not significant)	Minor (Not significant)
	Medium-low	Moderate (Significant or Not significant)	Moderate (Significant or Not significant)	Moderate - Minor (Not Significant)	Minor (Not significant)	Minor (Not significant)	Negligible (Not significant)
	Low	Moderate - Minor (Not Significant)	Moderate - Minor (Not Significant)	Minor (Not significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)

138. 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. Such narrative assessments provide a level of detail over and above the outline assessment provided by use of the matrix alone.

139. The landscape and visual assessment, unavoidably, involves a combination of quantitative and qualitative assessment and wherever possible cross reference has been made to objective evidence, baseline figures and / or to photomontage visualisations to support the assessment conclusions. Often a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach. Importantly, each effect results from its own unique set of circumstances and has been assessed on a case-by-case basis. The matrix, as presented in Table 6.1, should, therefore, be considered as a guide and any deviation from this guide has been clearly explained in the assessment.

6.8 Nature of Effects

140. The EIA Regulations state that the ES should define 'the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development'.

141. In accordance with the EIA Regulations, in this assessment the nature of effects refers to whether the landscape and / or visual effect of the onshore elements of the Project is positive or negative (herein referred to as 'beneficial', 'neutral' or 'adverse').

142. Guidance provided in GLVIA3 on the nature of effect states that "*in the LVIA, thought must be given to whether the likely significant landscape and visual effects are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity",* but it does not provide guidance as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and, where applied, this involves reasoned professional opinion.

143. In this LVIA a precautionary approach has been adopted, which assumes that significant landscape and visual effects are weighed on the adverse side of the planning balance, unless otherwise stated. Beneficial or neutral effects may, however, arise in certain situations and are stated in the assessment where relevant, based on the following definitions.

- Beneficial effects - contribute to the landscape and visual resource through the enhancement of desirable characteristics or the introduction of new, beneficial attributes. The development contributes to the landscape by virtue of good design or the introduction of new landscape planting. The removal of undesirable existing elements or characteristics can also be beneficial, as can their replacement with more appropriate components.
- Neutral effects - occur where the development fits with the existing landscape character or visual amenity. The development neither contributes to nor detracts from the landscape and visual resource and can be accommodated with neither beneficial or adverse effects, or where the effects are so limited that the change is hardly noticeable. A change to the landscape and visual resource is not considered to be adverse simply because it constitutes an alteration to the existing situation.
- Adverse effects - are those that detract from the landscape character or quality of visual attributes experienced, through the introduction of elements that contrast, in a detrimental way, with the existing characteristics of the landscape and visual resource, or through the removal of elements that are key in its characterisation.

6.9 OnSS Theoretical Visibility Analysis

144. The ZTVs on Figures 28.5, 28.6, 28.9, 28.12 and 28.14 (document reference 6.2.28) have been generated using Geographic Information Systems software to demonstrate the extent to which the OnSS may theoretically be seen from any point in the OnSS study area.

145. The OnSS technology will employ either Air Insulated Switchgear (AIS) or Gas Insulated Switchgear (GIS). The choice of switchgear affects both the total land area required and the size

and type of buildings which will be needed. If a GIS option is selected the land area needed for the OnSS will be up to 72,600m^2 (270m x 268.5m) in area. The maximum height of the GIS building will be 16.5m, excluding lightning masts and any land raising. If an AIS option is selected, the OnSS will be up to 143,380m^2 (428m x 335m) in area. The maximum height of buildings and/ or electrical equipment will be 13m, excluding any land raising.

146. The maximum design scenario for the finished ground level of the OnSS zone platform has been estimated using the existing ground levels as a guide to determine the ground level across the entire OnSS platform. It should be noted that the OnSS platform is based on the GIS footprint, because of its greater vertical extents, despite it being smaller in horizontal extents.

147. ZTVs are primarily calculated based on the visibility at 2m above the height of the landform relative to the height of the project (i.e. viewer height of 2m). The ZTV shown on Figures 28.5 reflects bare ground theoretical visibility. The ZTVs shown on Volume 3, Figure 28.6, 28.9, 28.12 and 28.14 (document reference 6.2.28) factor in the potential screening effect of areas of existing woodland within the study area. An average height of 10m has been attributed to all woodlands, and with heights based on observations during fieldwork, these are considered to be a conservative average. The ZTVs do not take into account the screening effect of smaller groups of trees, hedgerows, hedgerow trees, buildings or other local features. As a result, the ZTVs present a conservative worst case assumption in respect of theoretical visibility.

148. There are limitations in the production of the ZTVs, as presented below, and these should be borne in mind in their consideration and use:

- The ZTVs are based on 5m data grid (Ordnance Survey Terrain 5) with a viewer height of 2m above ground level;
- The bare ground ZTV does not consider the screening effects of woodlands, vegetation, buildings, or other local features that may prevent or reduce visibility;
- The screened ZTV illustrates the bare ground situation with major woodland blocks that are existing reflected, but does not consider the screening effects of other vegetation, buildings, or other local features that may prevent or reduce visibility, and does not consider the proposed mitigation planting;
- The woodland blocks included in the screened ZTV may differ to the actual height of woodland in the study area. Having undertaken fieldwork, it is considered that the assumed height of 10m used in the screened ZTV represents a conservative average;
- The ZTV does not indicate the decrease in visibility that occurs with increased distance from the OnSS location. The nature of what is visible from 1km away will differ markedly from what is visible from 5km away, although both are indicated on the ZTV as having the same level of visibility; and
- There is a wide range of variation within the visibility shown on the ZTV. For example, an area shown as having visibility of the OnSS location, may only gain views of the smallest extremity rather than all of it, as may be the case elsewhere.

- These limitations mean that while the ZTV is used as a starting point in the assessment, providing an indication of where the OnSS location will theoretically be visible from, the information drawn from the ZTV is not completely relied upon to accurately represent visibility of the OnSS location.

6.9.1 Visualisations

149. The viewpoint assessment of the OnSS is illustrated by a range of visualisations, including photographs and block model photomontages, which are in line with current best practice and the guidance provided in Landscape Institute – Visual Representation of Development Proposals (2019). Visualisations have a number of limitations when using them to form a judgement on a development. These include:

- The images provided give a reasonable impression of the scale of, and distance to the OnSS, but can never be 100% accurate;
- The viewpoints illustrated are representative of views in the area but cannot represent visibility at all locations;
- To form the best impression of the visual impacts of the OnSS these images are best viewed at the viewpoint locations shown;
- The visualisations must be printed at the right size to be viewed properly (A1 width) and viewed at a comfortable viewing distance;
- The visualisations are presented as follows:
    - The first visualisation sheet for each of the viewpoints (a) illustrates the existing view with a baseline photograph;
    - the second visualisation sheet (b) presents a photomontage showing an indicative computer-generated model[2] of an AIS OnSS based on the MDE set within the Rochdale Envelope shown as a dashed white line, representing the maximum extents of the OnSS (AIS footprint and GIS height);
    - the third visualisation sheet (c) presents the photomontage as shown in visualisation sheet (b), but including the proposed mitigation planting at year 15;
    - the fourth visualisation sheet (d) presents a photomontage showing an indicative computer-generated model[2] of a GIS OnSS based on the MDE set within a Rochdale Envelope shown as a dashed white line, representing the maximum extents of the OnSS (AIS footprint and GIS height); and,
    - the fifth visualisation sheet (e) presents the photomontage as shown in visualisation

[2] Indicative models are represented in the photomontages for the AIS OnSS and GIS OnSS (where relevant to that visualisation sheet), however these are purely to give an impression of the typical appearance of these types of development and are presented within the PDE defined by the white dashed line.

sheet (d), but including the proposed mitigation planting at year 15.

150. A 3D block model of the GIS OnSS has been included in the viewpoint visualisations. The parameters of the 3D block model and its location on the estimated OnSS platform taken from existing ground levels, represents the Maximum Design Envelope for the ES.

151. As outlined above the proposed mitigation planting has been included in the r visualisation sheets (c and e) for each of thew viewpoints.. These visualisations represent the approximate height of mitigation planting after 15 years, estimated to be 7 to 10m and therefore shown on the year 15 visualisations at an average of 8.5m in height.

152. The photographs used to produce the photomontages have been taken using Canon EOS 5D and 6D Digital SLR cameras, with a fixed lens and a full-frame (35mm negative size) CMOS sensor. The photographs are taken on a tripod with a pano-head at a height of approximately 1.5m above ground. To create the baseline panorama, the frames are individually cylindrically projected and then digitally joined to create a planar projected panorama with a 53.5-degree field of view. Tonal alterations are made using Adobe software to create an even range of tones across the photographs once joined.

153. The photographs 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 will be apparent to the human eye. The assessments are carried out from observations in the field and, therefore, may include elements that are not visible in the photographs.

6.10 Assumptions and Limitations

6.10.1 Graphic Production

154. ZTV and photomontage visualisations have specific limitations which are described in detail in the section above.

6.11 Fieldwork

155. It is not possible to visit every part of the study area when undertaking an LVIA and, therefore, some aspects of the assessment are based on desk-based study and professional experience.

7 Impact Assessment

7.1 Impact Assessment: Physical Landscape

7.1.1 Introduction

156. The proposed building of the OnSS and access road, open trenching relating to the onshore ECC and 400kV cable corridor, and creation of temporary construction access and TCCs, will have effects on the physical landscape elements of the coastal land, agricultural land, trees and hedgerows. There are some small woodlands within the LVIA study area, however, direct impacts to these have been avoided through the routing of the onshore ECC and 400kV cable corridor to avoid these or the use of trenchless crossings to install cables beneath woodlands and so avoid disturbance. Coastal land, agricultural land, trees and hedgerows are the four physical elements that have been identified for the purposes of this assessment.

157. As described in Basis of Assessment 5, the onshore ECC and 400kV cable corridor are only considered to have potential for significant effects during the construction phase due to the disturbance of landscape features required to construct the underground infrastructure. Once construction is complete, there will be no further effect on the physical landscape elements. Re-establishment of trees and hedgerows will take some time, with these residual effects extending into the operational phase. These residual effects are also considered in this assessment.

158. The potential for significant effects to arise during the construction of the landfall, onshore ECC and 400kV cable corridor are limited owing to the following factors;

- the extent of land affected will be limited to the TCCs and the typically 80m working width of the onshore ECC and typically 60m working width of the 400kV cable corridor;
- the construction works will occur on land that is routinely worked by machinery and where there is very little permanent vegetation;
- the onshore ECC and 400kV cable corridor have been routed to avoid woodland;
- the extensive use of trenchless crossings means that the majority of the land will remain undisturbed, including the trees and hedgerows associated with the roads and drains that will be drilled under; and
- the extent of tree cover, hedgerows and other semi-natural areas is very limited in this landscape, especially where marshland has been reclaimed for agricultural land uses.

159. The combination of the baseline characteristics of the rural landscape, the relatively small scale of the construction works and the sensitive routing of the onshore ECC and 400kV cable corridor means that there will be very few changes to the physical elements of the landscape.

7.1.2 Coastal Land

7.1.2.1 Baseline

160. This landscape element is made up of several distinct elements that together create the coastal land found at the northeastern extent of the onshore ECC, where the landfall occurs. The distinct elements include the beach, dune grassland, sea bank, coastal marsh and coastal farmland. The farmland comprises small to medium sized fields of arable crops in an open landscape with very little enclosure from hedgerows and an absence of tree cover. The enclosure in this coastal area is formed by the historic sea bank which creates an embankment between the beach and dunes and the farmland and coastal marshland.

161. The landfall is located at Wolla Bank, to the south of Anderby Creek. This area is characterised by the natural features of a broad sandy beach with low hummocky dunes behind which are located protected areas of marsh. There are also the man-made features of the sea bank, coastal road, farmland and settlement, including the caravan parks on the northern and southern edges of the area. The coastline follows a broadly north – south orientation with the beach, dunes, sea bank and road following this alignment.

7.1.2.2 Sensitivity

162. The value of the coastal land is medium-high. There are no national or county level landscape planning designations which would otherwise denote a special value. This coastline includes the Wolla Bank Pit and Chapel Pit Nature Reserves which indicate the nature conservation value of these coastal marshlands. A short section of the much longer English Coast Path passes adjacent to the landfall, indicating the recreational value of this coastline.

163. The susceptibility of the coastal land is medium-high. While a number of natural elements have been preserved, including the beach, dunes and marshland, much of this coastal landscape has been modified by the introduction of the sea bank, coastal road, parking, occasional small-scale built development and caravan parks further to the north and south. Arable farmland also extends close up to the coastal edge, such that only a narrow strip of unmodified or semi-unmodified marsh or scrub remains. The susceptibility of the coastal land is also moderated by the ease with which the agricultural land affected will be restored following the completion of construction.

164. The medium-high value and the medium-high susceptibility of the coastal land gives rise to an overall medium-high sensitivity.

7.1.2.3 Magnitude of Change

165. The landfall will involve trenchless technique to install ducts within which the offshore power cables will be pulled through and joined to the onshore cables at a transition joint bay located in a farm field on the western side of the coastal road. Each drill would start from the landfall compound to the west of Roman Bank, to drill eastward below Roman Bank, Anderby Marsh LNR, the sea deference, and beach, exiting in the subtidal zone at a suitable depth seaward of MLWS (MLWS). This avoids disturbance to the features of the coastal land, including the beach, dunes, marshland, coastal path, sea bank and road. There will be no construction

works on the beach.

166. The effect of the landfall construction will, therefore, relate principally to the alteration of the coastal farmland which will accommodate the TJBs and TCCs. The area of land likely to be affected will comprise the Landfall Compound (up to 70,000m^2), a temporary Duct Storage Compound (27,000m^2), up to six TJBs (1,242m^2) and a 4m high noise bund between the Landfall Compound and Roman Bank. The land will be reinstated following the overall 51 month duration of the construction works. The field is farmed for arable crops and there is limited hedgerow enclosure with only a short strip along the northern edge. This land is routinely disturbed through ploughing and harvesting and there is no permanent or natural vegetation. The farmland will be easily reinstated post construction and the increase in level of up to 1.5m will not have a notable effect on the physical qualities or characteristics of the coastal farmland.

167. Taking into account the fact that the more sensitive physical landscape elements of the coastal land will not be disturbed owing to the use of trenchless technique, and only a field of the coastal farmland will be disturbed but will be easily reinstated, the magnitude of change on the coastal land will be low.

7.1.2.4 Significance of Effect

168. The effect of the landfall on the coastal land will be **not significant** at a **moderate-minor** level. Despite the medium-high sensitivity of this physical landscape element, the magnitude of change will be low. The effect will be adverse, short term and reversible.

7.1.3 Agricultural Land

7.1.3.1 Baseline

169. Agricultural farmland is the predominant land use along the length of the onshore ECC and 400kV cable corridor, and across the OnSS. It largely comprises fields of arable with only occasional fields of pasture for livestock, more commonly located in the older landscapes or close to the coast. While some parts of the onshore ECC are located in areas of historic farmland, where the fields are small or medium and the land shows some relief, the majority of the route and the OnSS are located in areas of reclaimed marshland where the fields are large, the land is level and low-lying and a strong geometric pattern is formed by the grid system of drains.

170. The arable land along much of the onshore ECC and 400kV cable corridor, and across the OnSS, is constantly being disturbed through ploughing, seeding and harvesting. The absence of permanent vegetation, as well as the changing vegetation in the fields, is, therefore, a common and integral feature of the agricultural landscape. There are very few natural areas in the agricultural landscape, especially in the heavily modified reclaimed landscapes to the south of the LVIA study area. The intensive nature of arable farming also means that machinery is in frequent use on the land and forms part of the baseline character.

7.1.3.2 Sensitivity

171. The onshore ECC, 400kV cable corridor and the OnSS do not coincide with any designated

landscapes and the agricultural land has no special value in relation to its characteristics as a landscape element. The value of the agricultural land as a landscape element is considered to be medium - low.

172. Arable crops and grassland are considered relatively easy to replace. The level of existing disruption as a result of crop cultivation, combined with the widespread occurrence of agricultural land as a landscape element and the ease with which these types of vegetation can be reinstated, means that susceptibility is considered to be low.

173. The medium - low value combined with the low susceptibility gives rise to a sensitivity rating of medium - low for the agricultural land.

7.1.3.3 Magnitude of Change

174. A combination of open cut trenching and trenchless technique will be used along the length of the onshore ECC and 400kV cable corridor, with approximately 216 locations of trenchless technique being implemented. This means that a notable extent of the onshore ECC and 400kV cable corridor will have no direct effect on the agricultural land, as where trenchless techniques are deployed this will occur underground. This also means that where the physical elements of hedgerows and trees do typically occur alongside drains and roads, these will not be removed where trenchless techniques are deployed (effects on hedgerows and trees assessed separately below).

175. On the sections between trenchless technique, open cut trenching will mean that the agricultural land will be temporarily disturbed for the laying of the cables. This will occur in an 80m working width and result in a permanent 60m easement. The level of change relating to cable route trenching, construction of haul roads, and presence of soil bunds within the onshore ECC and 400kV cable corridor will form a relatively small-scale and localised disturbance to the agricultural land. After the cable has been laid, the trench will be backfilled, and temporary working areas and haul roads removed. The agricultural land will then return to its previous use. Re-instatement is therefore considered relatively straightforward with minimal disruption required to return the land to its previous uses and productivity. The magnitude of change associated with the onshore ECC and 400kV cable corridor will be low within the areas where open cut trenching will occur.

176. The proposal is for 9 Primary TCCs (PCCs) and 21 Secondary TCCs (SCCs) to be located strategically from the landfall site along the length of the onshore ECC and 400kV cable corridor. T A minimum of 313[3] Cable Installation Compounds (CICs) will also be required to facilitate the trenchless crossing works and joint bays installation works.. These will have more of an impact on the agricultural land than the open cut trenching owing to the laying of a temporary hard surface, as well as the stripping and storage of topsoil. Reinstatement will involve the removal

[3] This is based on the number of trenchless crossings in the Project's design basis as outlined in ES Chapter 3: Project Description.

and disposal of the temporary hard surface and the relaying of the topsoil to bring the agricultural land back into production. The magnitude of change associated with these TCCs will be medium-low within the areas where the TCCs will be located.

177. Agricultural land will also be affected by the construction of the OnSS. The AIS option will require a permanent land take of c. 144,000m^2 for the OnSS footprint while the GIS option will require c. 72,600m^2,. There will also be an OnSS Primary Construction Compound (OnSS PCC)[4] [PCC-29] covering an area of up to 40,000m^2 for both AIS and GIS options and an OnSS Security & Logistics Compound [PCC-30] located by the access route from the A16 at the Newlands Road junction. The footprints associated with the AIS and GIS options will remove a notable area of agricultural land from production over the 4-year construction phase and up to 35 year operational phase of the Project. The magnitude of change associated with the OnSS will be medium-high within the area of the footprint and is prevented from being rated high owing to the ease with which the farmland will ultimately be reinstated following decommission over the long term. The magnitude of change associated with these TCCs will be medium-low owing to the ease with which the agricultural land can be reinstated within the short term.

178. Taking these factors into account, the magnitude of change on the agricultural land relating to the open cut trenching will be low, relating to the TCCs will be medium-low and relating to the OnSS will be medium-high.

7.1.3.4 Significance of Effect

179. The effect of the onshore ECC and 400kV cable corridor on the agricultural land will be **not significant** at a **minor** level and the effect of the TCCs on the agricultural land will be **not significant** at a **moderate-minor** level. This assessment is based on the medium-low sensitivity and the low or medium-low magnitude of change. The effect will be adverse, short term and reversible.

180. In respect of the OnSS, the medium-low sensitivity and the medium-high magnitude of change will result in a **significant** effect at a **moderate** level. The effect will be adverse, long term and reversible.

7.1.4 Hedgerows

7.1.4.1 Baseline

181. Hedgerows are not a common feature in the rural landscape in which the onshore ECC, 400kV cable corridor and OnSS occur. Compared to other parts of rural England, there are relatively few hedgerows occurring along the route of the onshore ECC and 400kV cable corridor, or on the site of the OnSS, owing to a combination of the origins of much of this

[4] A portion (5,400m^2) of the OnSS PCC will need to be retained to facilitate the Commissioning phase, this is referred to as the 'commissioning compound' and will be reinstated following successful testing and commissioning of the OnSS. The remainder of the OnSS PCC will be reinstated upon completion of the construction of the OnSS.

agricultural land being reclaimed from marshland and the intensification of arable farmland which has led to an increased size in farm fields and the further loss to an already low provision of hedgerows. While hedgerows do occur, they are limited in extents and limited in size. They typically occur along road sides, drains or field boundaries and are often well-managed such that they are kept small in height, with few occurrences of scrubbier or taller hedgerows in which hedge trees could otherwise develop.

7.1.4.2 Sensitivity

182. Hedgerows form an important component of the rural and historic landscape character, and their value is considered to be medium - high.

183. The sections of hedgerow lost to construction works will be reinstated post construction and as this can be achieved with relative ease this reduces their overall susceptibility to the onshore ECC and 400kV cable corridor. Susceptibility for hedgerows is considered to be medium - low.

184. The medium - high value combined with the medium - low susceptibility gives rise to a sensitivity rating of **medium** for the hedgerows.

7.1.4.3 Magnitude of Change

185. The combination of the approximate 216 locations for trenchless technique and careful consideration of cable routing has minimised the amount of hedgerow removal along the onshore ECC and 400kV cable corridor. The limited occurrence of hedgerows in this open agricultural landscape combined with their location typically adjacent to roads or drains where trenchless technique will be deployed has meant that there will be very few losses incurred. The few locations where hedgerow removal will be required relates to the installation of access routes into the onshore ECC. Reinstatement of removed sections of hedgerows will mitigate the effects of lost hedgerows by infilling gaps and completing the enclosure, taking low hedgerows approximately 3 to 5 years to mature.

186. The magnitude of change for hedgerow losses will give rise to a **low** magnitude of change, reflecting the very limited losses that will be incurred along the approximate 70km length of the onshore ECC and the length of the 400kV cable corridor, their low height, fragmented or scrubby condition, and the ease with which they will be replaced.

7.1.4.4 Significance of Effect

187. In respect of the majority of hedgerows along the onshore ECC and 400kV cable corridor there will be no effect as the use of trenchless technique will ensure hedgerows will not be removed.

188. The effect of the onshore ECC and 400kV cable corridor on the hedgerows will be **not significant** at a **minor** level. This assessment is based on the medium sensitivity and the low magnitude of change. The effect will be adverse, medium term and reversible.

189. While the construction phase of the onshore ECC and 400kV cable corridor is programmed over a 42 month period, and the reinstatement of the hedgerows will be implemented during

the next planting season following construction, it will take 3 to 5 years for the hedgerows to fill the gaps created by the losses, making this effect medium term rather than short term and potentially extending the effect from the construction phase into the operational phase.

7.1.5 Trees

190. Mature trees are found within parts of the onshore ECC, 400kV cable corridor and in the area around the OnSS. Compared to other parts of rural England, there are relatively few trees occurring along the route of the onshore ECC and 400kV cable corridor, and on the site of the OnSS, owing to a combination of the origins of much of this agricultural land being reclaimed from marshland and the intensification of arable farmland which has led to an increased size in farm fields and the further loss of trees along field boundaries. While trees do occur, they are limited in extents with very few areas of woodland occurring. Trees typically occur around residential properties to provide shelter and occasionally in single rows along roadsides, drains or field boundaries. These trees provide a notable contribution to the landscape character along the onshore ECC and 400kV cable corridor and around the OnSS in terms of the character and enclosure they provide in an otherwise open and largely featureless agricultural landscape.

7.1.5.1 Sensitivity

191. Trees are of importance to the historical pattern and character of the landscape. All trees, and particularly mature trees are important in terms of the contribution they make to landscape character, especially in landscapes, such as this, that have been heavily modified by intensive agricultural practices. The value of trees occurring within the onshore ECC, 400kV cable corridor and around the OnSS is considered to be medium-high.

192. Re-establishment of trees will take 15 to 20 years to reach semi-maturity in those locations where replanting will be appropriate such as where access roads or TCCs have required tree removals. Where tree removal occurs over the onshore ECC and 400kV cable corridor, replanting will not be possible and the loss of trees will be long term over the 35 year operational phase of the Project. These factors heighten the overall susceptibility of the trees and as such, susceptibility is considered to be medium-high.

193. The combination of the medium-high value and the medium-high susceptibility gives rise to an overall **medium-high** sensitivity.

7.1.5.2 Magnitude of Change

194. The combination of the approximate 216 locations for trenchless technique and careful consideration of cable routing has minimised the amount of tree removals along the onshore ECC and 400kV cable corridor and generally there will be **no change**. The limited occurrence of trees in this open agricultural landscape combined with their location typically adjacent to roads or drains where trenchless technique will be deployed has meant that there will be very few losses incurred. Where woodland occurs and cannot be avoided through rerouting, trenchless technique has been deployed to avoid any tree losses in these areas. The openness of the agricultural land, where the OnSS will be located, means there will be no major tree losses associated with its construction. The few locations where tree removal will be required relates

to the installation of access routes into the onshore ECC. While the replanting of trees in these areas will be permitted, it will take 15 to 20 years for these trees to reach semi-maturity making these effects long term.

195. The magnitude of change for tree losses will give rise to a **medium-high** magnitude of change, reflecting the very limited losses that will be incurred along the approximate 70km length of the onshore ECC and length of the 400kV cable corridor, but also taking into account the importance of trees within such an open and exposed agricultural landscape and the length of time that it will take for them to reach a suitable stature to replace the lost trees.

7.1.5.3 Significance of Effect

196. In respect of the majority of trees and all woodland along the onshore ECC and 400kV cable corridor, and around the OnSS, trenchless techniques will be deployed to ensure that woodland and the majority of trees will not be removed, therefore in these instances there will be **no effect.** .

197. The effect of the onshore ECC, 400kV cable corridor and OnSS on the trees to be removed will be **significant** at a **major-moderate** level. This assessment is based on the medium-high sensitivity and the medium magnitude of change relating to trees. The effect will be adverse, long term and reversible. Trees removed over the onshore ECC will be unable to be replanted within the lifespan of the Project and only reversible following decommission.

198. While the construction phase of the onshore ECC and 400kV cable corridor is programmed over a 41 month period, and the reinstatement of the trees will be implemented during the next planting season following construction, it will take 15 to 20 years for the tress to reach the height of the trees removed, making this effect long term rather than short term and extending the effect from the construction phase into the operational phase.

7.1.6 Summary of Effects on Physical Landscape Elements

199. There will be no significant effects on the coastal land as a result of the landfall and there will be no significant effects on the agricultural land or the hedgerows as a result of the onshore ECC, 400kV cable corridor or OnSS. Where hedgerows are removed during the construction phase, there will be a medium-term effect as these will be replaced post construction and will reach their original height within 3 to 5 years. The majority of woodland and trees will remain unaffected by the onshore ECC, 400kV cable corridor or OnSS. In the very few instances where tree removals may be required, the effect will be significant, at a major-moderate level, and long-term, albeit especially localised in extents.

200. The OnSS will have a significant effect on the loss of agricultural land over the construction and operational phases, but this effect will be reversible as the agricultural land will be reinstated at decommissioning. Where trees are removed during the construction phase, the effect will be significant and long-term, owing to the 15-to-20-year period it will take for the trees to reach semi-maturity. Extensive tree planting will be implemented around the OnSS as part of the mitigation measures, which are described in section 5 and in the OLEMS (document reference 8.10).

201. The predominance of arable farmland and the very limited occurrence of hedgerows and trees, combined with the extensive use of trenchless technique, careful routing of the onshore ECC and 400kV cable corridor, and selective location of the landfall and OnSS, means that effects on the physical elements will be very limited in extent.

7.2 Impact Assessment: Landscape Character

7.2.1 Introduction

202. Landscape character receptors within the LVIA study area are assessed to identify which have potential to be significantly affected by the onshore elements of the Project. Typically, this assessment includes LCAs and landscape designations, but as there are no landscape designations within the LVIA study area, this assessment focuses on the effects on the LCAs.

7.2.2 Landfall, Onshore ECC and 400kV Cable Corridor

203. In considering the potential effects of the construction of the landfall, onshore ECC and 400kV cable corridor on the LCAs, there are a number of factors that ensure these effects will not be significant.

204. Firstly, the extent of land affected by the construction of the landfall, onshore ECC and 400kV cable corridor will be limited to those localised areas at and around the landfall, the 80m working width of the onshore ECC and 400kV cable corridor and the extents of the associated TCCs and access roads. Secondly, the construction works will all be at or below ground level with the most visible elements formed by the machinery required for trenchless technique and cutting operations. These first two factors combine to ensure that the construction works are relatively small in scale and contained. Thirdly, the construction works associated with the landfall, onshore ECC and 400kV cable corridor will occur in landscapes characterised by arable farming, where the disturbance of soil and presence of machinery is a common feature in relation to agricultural land-uses. The construction works will occur on land that is routinely worked by machinery and the construction works will typically not have a sufficient influence to redefine the character of these landscapes.

205. It should also be noted that the occurrence and extent of tree cover and hedgerows is limited within the LVIA study area, and as assessed at section 7, the loss of hedgerows and trees will be very localised and limited. These factors, therefore- moderate the susceptibility of the LCAs to changes in character that might otherwise arise. Fourthly, where the landfall, onshore ECC or 400kV cable corridor is located in the LCA and direct effects will arise, the construction works will occupy an especially small proportion of the much wider LCA, and where the landfall, onshore ECC or 400kV cable corridor is located outwith the LCA and indirect effects occur, the influence would be even weaker. It is in this context that the construction works will not have a sufficient influence to redefine the character of these extensive LCAs.

206. Whilst some very limited permanent tree removal will occur as a result of the onshore ECC, the effect will be limited when considered within the overall characteristics of the wider areas.

It is considered that whilst these effects will have some association with the LCAs in which the proposed landfall, onshore ECC and 400kV cable corridor will occur, these LCAs are only likely to experience a low scale of change and/ or effects experienced over limited geographic areas.

207. As a result, it is considered that the construction of the proposed landfall, onshore ECC and 400kV cable corridor will not become a prevailing or defining element or characteristic within the context of the existing landscape character and, therefore, does not have potential to give rise to significant effects and is, therefore, not assessed in the LVIA.

208. There is no potential for the landfall, onshore ECC and 400kV cable corridor to give rise to effects during the operational phase as the infrastructure will mostly be buried underground and therefore not visible. There is the potential for residual effects associated with tree or hedgerow removals to extend beyond the construction phase and into the operational phase, but these will not be of a sufficient occurrence or scale to redefine the character of the LCAs.

209. This section of the LVIA focusses on the effects of the LCAs during the construction and operational phases relating to the OnSS.

210. The landscape effects of the landfall, onshore ECC, 400kV cable corridor and OnSS during the decommissioning phase will be the same or less than those identified during the construction phase, as described at section 8 and are, therefore, not assessed in detail in this assessment.

7.2.3 OnSS

7.2.3.1 Preliminary Assessment

211. The OnSS is situated in the narrow band of land that lies to the immediate east of the A16 and to the immediate west of the River Welland. The OnSS is located to the immediate south of the Risegate Drain and east of the A16 in an area of arable farmland characterised by large unenclosed fields set in a geometric drainage system.

212. The following assessment considers the effects of the OnSS on the landscape character of this area. In the absence of any county or district level Landscape Character Assessment, this assessment is based on Natural England's National Character Area Profiles. This information has been supplemented by site work that has defined two LLCAs that occur in the OnSS study area.

213. Figure 28.9 (document reference 6.2.28.9) illustrates the NCA and LLCAs in conjunction with the bare ground ZTV. This figure shows that the OnSS is located in 46 Fens NCA and the Surfleet and Gosberton Marsh LLCA. Figure 28.9 (document reference 6.2.28.9) shows that the Surfleet Marsh LLCA and the Weston Marsh LLCA have the potential to be affected by the OnSS and these LLCAs are assessed in detail below. Figure 28.9 (document reference 6.2.28.9) shows that no landscape designations will be affected by the OnSS.

7.2.3.2 The Fens NCA

Baseline

214. The Fens NCA covers an extensive area of land that extends from Skegness in the north to Cambridge in the south, and from Peterborough in the west to Kings Lynn in the east. The NCA

lies to the west of The Wash and largely comprises farmland reclaimed from marshland. The key characteristics, set out in Natural England's National Character Area Profile 46, are as follows;

"Expansive, flat, open, low-lying wetland landscape influenced by the Wash estuary, and offering extensive vistas to level horizons and huge skies throughout, provides a sense of rural remoteness and tranquillity.

Jurassic clays are overlain by rich, fertile calcareous and silty soils over the coastal and central fens and by dark, friable fen peat further inland. The soils are important for agriculture, which is hugely significant for the rural economy in the Fens. There are over 4,000 farms in the Fens; enough wheat is grown here annually to produce a quarter of a million loaves of bread and one million tons of potatoes are grown here. In addition to traditional vegetables, exotics such as pak choi are now cultivated. Some 40 per cent of England's bulbs and flowers are also produced in the Fens.

The Wash is the largest estuarine system in Britain, supporting internationally important intertidal and coastal habitats influenced by constant processes of accretion and deposition, forming salt marsh and mudflats and providing habitats for wildfowl, wading birds and other wildlife, including grey seals and approximately 90 per cent of the UK's common seals. It also provides important natural sea defences and plays a key role in climate change regulation. Flood storage areas on the Nene, Cam, Lark and Ouse washes also provide significant biodiversity interest. True fen mainly occurs at remnant conservation sites, such as Baston or Wicken Fen.

Overall, woodland cover is sparse, notably a few small woodland blocks, occasional avenues alongside roads, isolated field trees and shelterbelts of poplar, willow and occasionally leylandii hedges around farmsteads, and numerous orchards around Wisbech. Various alders, notably grey alder, are also used in shelterbelts and roadside avenues.

The predominant land use is arable – wheat, root crops, bulbs, vegetables and market gardening made possible by actively draining reclaimed land areas. Associated horticultural glasshouses are a significant feature. Beef cattle graze narrow enclosures along the banks of rivers and dykes and on parts of the salt marsh and sea banks.

Open fields, bounded by a network of drains and the distinctive hierarchy of rivers (some embanked), have a strong influence on the geometric/rectilinear landscape pattern. The structures create local enclosure and a slightly raised landform, which is mirrored in the road network that largely follows the edges of the system of large fields. The drains and ditches are also an important ecological network important for invertebrates, fish including spined loach, and macrophytes.

The area is very rich in geodiversity and archaeology, with sediments containing evidence for past environmental and climate changes and with high potential for well-preserved waterlogged site remains at the fen edge, within some of the infilled palaeo-rivers and beneath the peat.

Large, built structures exhibit a strong vertical visual influence, such as the 83 m-high octagonal tower of 'Boston Stump' (St Botolph's Church), Ely Cathedral on the highest part of the Isle of Ely dominating its surrounding fen, windfarms and other modern large-scale industrial and

agricultural buildings, while drainage and flood storage structures and embanked rail and road routes interrupt the horizontal fen plain.

Settlements and isolated farmsteads are mostly located on the modestly elevated 'geological islands' and the low, sinuous roddon banks (infilled ancient watercourses within fens). Elsewhere, villages tend to be dispersed ribbon settlements along the main arterial routes through the settled fens, and scattered farms remain as relics of earlier agricultural settlements. Domestic architecture mostly dates from after 1750 and comprises a mix of late Georgian-style brick houses and 20th century bungalows."

215. The Fens NCA presents a useful starting point in the assessment of effects of the OnSS on landscape character by describing the characteristics of the wider landscape area, which incorporates the 5km radius OnSS study area. There is little variation in the character of this NCA which is defined by the extensive flat and low-lying landform, and predominance of agricultural land with limited enclosure and tree cover. Local landscape character is therefore defined by local landscape or man-made features which contribute to a local identity.

216. The OnSS study area is typical of the Fens NCA description in that the landscape is characterised by flat and low-lying arable farmland that has been reclaimed from marshland. As such, the landscape follows the geometric pattern of the drainage ditches and channelised water courses. There is also very limited woodland and hedgerow cover, leaving much of this area open and exposed. While there are only farmsteads and dispersed rural properties and no settlements within close proximity of the OnSS, there is a concentration of larger settlements with Pinchbeck and Spalding to the south, the towns of Gosberton to the west and Sutterton to the north and the village of Surfleet Sea End within the closer range to the south. The main features in and around the OnSS are the busy A16 to the immediate west and the overhead transmission line that crosses this area from the northwest to the southeast.

217. There are also key characteristics used to describe the Fens NCA which are not applicable to the OnSS study area, namely the characteristics attributed to the intertidal and coastal habitats of The Wash which lie further to the east and do not influence the local landscape character.

218. For the purposes of this assessment, the OnSS study area has been divided into two Local Landscape Character Areas (LLCAs). The key feature in this area is the River Welland owing to its prominent raised embankments amidst a flat landscape, as well as its width and length which make it a notable landscape element. The river forms a visual and physical divide between Weston Marsh to the east and Surfleet and Gosberton Marsh to the west and has led to the definition of the Weston Marsh LLCA and Surfleet and Gosberton Marsh LLCA. There is variation in the character of these two LLCAs, with Surfleet and Gosberton Marsh LLCA being influenced by the A16, the overhead electricity transmission line and large-scale developments on the northern fringes of Spalding, while the Weston Marsh LLCA is slightly more rural, albeit with an influence also from the overhead electricity transmission line.

219. Figure 28.9 (document reference 6.2.28.9) illustrates the LLCAs in conjunction with the

bare ground ZTV, which shows that the OnSS lies in the Surfleet and Gosberton Marsh LLCA and that this LLCA and the Weston Marsh LLCA to the immediate east have the potential to be affected by the OnSS, The effects on these LLCAs are assessed in detail below. Figure 28.10 (document reference 6.2.28.10) shows that there are no landscape designations within the OnSS study area and therefore no potential for significant effects to arise in respect of landscape designations.

220. The assessment considers a MDE based on the footprint of the AIS and the height of the GIS as this presents the maximum parameters and ensures the worst case scenario is covered in the assessment.

7.2.4 Surfleet and Gosberton Marsh Local Landscape Character Area

7.2.4.1 Baseline

221. The Surfleet and Gosberton Marsh LLCA is defined by the combination of the low-lying and level landform and the extensive arable farmland which occupies most of its extents. Large fields of predominantly arable crops and occasionally pasture, combined with an extensive network of drainage ditches, creates a large geometric pattern across the rural landscape. Much of this landscape was reclaimed from marshland and the limited presence of hedgerows and tree cover creates an open and exposed character. One of the key features in this landscape is the River Welland which forms the eastern extent of the LCCA and which flows through an elevated channel with embankments on either side. The Macmillan Way is a recreational long distance footpath and also bridleway and byway in sections, that follows the river and affords elevated and open views across Surfleet Marsh to the west and Weston Marsh to the east.

222. Settlement in the LCCA mainly comprises farmsteads, which although dispersed across the landscape, present concentrations of large farm sheds. Other rural properties occur either in isolated locations or small clusters and although they are mostly enclosed by garden vegetation, some also experience views out across the surrounding farmland. The southern extent of the LLCA is marked by the village of Surfleet-Seas-End which is a linear settlement following the course of the River Glen and the properties experience a mix of open aspect and enclosure from vegetation and built form. The A16 is the main road which passes north – south to the west of the OnSS. This is a busy road with a heavy traffic flow that creates a physical divide in this LLCA. While there is some enclosure from road-side vegetation, there are also long open sections. There is also an overhead transmission line that cuts northwest to southeast across the A16 and along the southern side of the OnSS.

7.2.4.2 Sensitivity

223. The value of the Surfleet and Gosberton Marsh LLCA is medium. There are no landscape planning designations covering this LLCA which would otherwise denote a special scenic value.

224. The susceptibility of this LLCA to the effects of the OnSS is medium-high. The high part of the rating relates to the fact that the OnSS will be located in this LLCA and it is a predominantly rural landscape with limited occurrence of other large scale energy developments. The medium part of the rating relates to the fact that despite the limited occurrence of development, this

landscape has been heavily modified by agricultural practices and there are very few natural or semi-natural areas. There are also the electricity transmission lines and the A16 which pass through the LCCA, as well as settlements, roads and larger industrial and energy developments in the adjacent urban area to the north of Spalding.

225. The combination of the medium value and the medium-high susceptibility gives rise to an overall **medium-high** sensitivity.

7.2.4.3 Magnitude of Change

226. The magnitude of change across the localised part of the LLCA around the OnSS during the construction and operational phases will be **high**, **medium-high**, or **medium** while the magnitude of change on the remaining parts of the LLCA will be **medium-low**, **low** or with **no change**. The ZTV superimposed on the LLCAs is presented on Figure 28.9 (document reference 6.2.28.9) and, along with site work in this LLCA, has been used to inform this assessment.

227. As this is a flat and low-lying landscape, the extents of the effects will be largely determined by the location of intervening features, especially the embankments associated with the River Welland, but also farmsteads, settlements, tree cover and hedgerows. As illustrated on the ZTV on Figure 28.9 (document reference 6.2.28.9), the area immediately surrounding the OnSS will be subject to high levels of visibility and here the magnitude of change will be high. The River Welland forms a notable break in the continuity of visibility, with high levels of visibility occurring out to the embankment and then dropping off and becoming patchy on the opposite side to the east. The magnitude of change will be high dropping to medium-high or medium extending from the OnSS to the River Welland at a minimum of approximately 1.6km to the east, 1.4km to the southeast and 1.6km to the south.

228. The high to medium-high magnitude of change will extend approximately 0.6km north from the OnSS to Marsh Lane where hedgerows, intermittent tree cover and buildings form a divide and a medium magnitude of change will extend approximately 1.3km to the north beyond which tree cover and distance reduces visibility such that the magnitude of change drops to low. To the northwest, tree cover along the A16 reduces the magnitude of change to medium in the area out to approximately 1.3km, beyond which the combination of buildings, hedgerows and tree cover in Sutterton Dowdyke reduce the visibility and the magnitude of change to low.

229. To the west, the magnitude of change over the short distance to the A16 is high and beyond there is an openness to the landscape such that the visibility of the OnSS will give rise to a medium magnitude of effect and this will extend out to approximately 1.4km. Beyond, this buildings, hedgerows and tree cover will reduce the magnitude of change to low. To the southwest of the OnSS, the tree cover along the A16 and around the properties to the west of this creates an effective screen that reduces the magnitude of change from medium-high down to low at a range of approximately 0.8km.

230. In the close-range areas, typically within 0.7km to 1.0km, the presence of the OnSS means that it will appear as a large-scale energy development, at variance with the small to medium

scale and predominantly rural character of the LLCA, despite the baseline influence of the overhead electricity transmission line. Here the magnitude of change will range from high to medium-high.

231. In the middle range areas, typically within 1.0km to 1.6km, although tree cover, hedgerows, farmsteads and rural properties, form a partial screen and sense of separation from the immediate landscape around the OnSS, there will be sufficient visibility to give rise to a medium or occasionally medium-high magnitude of change. While visibility from these middle range parts of the LCCA will typically comprise vertical sections or roof sections of the OnSS seen between or above the screening elements, there may also be instances where openings present much fuller visibility.

232. Beyond these extents, the increased separation distance, will reduce the perceived scale of the OnSS, and the accumulation of the screening effect of the river embankments, farmsteads and settlement, and intervening vegetation will reduce the extent of visibility. These factors combine to reduce the magnitude of change to low. The limited visibility of the OnSS from these more distant locations and the stronger influence from the close-range baseline landscape will ensure that the OnSS will not form the defining feature in terms of landscape character. Where there is no visibility, there will be no change.

233. The mitigation planting shown in Figure 28.15 (document reference 6.2.28.15) comprises shelterbelts of woodland and hedgerows that surround the OnSS and will create an effective screen from the surrounding landscape. During the approximate 15 year period of growth, the mitigation planting will reduce the high, medium-high or medium magnitude of change on the Surfleet and Gosberton Marsh LLCA to **low** or **negligible**.

7.2.4.4 Significance of Effect

234. There will be localised effects on the Surfleet and Gosberton Marsh LLCA that will be **major** or **moderate-major** and **significant** out to approximately 1.3km to the north and northwest, 1.4km to the west, 1.6km to the northeast and east, 1.4km to the southeast, 1.6km to the south and 0.8km to the southwest. The effects beyond these extents will either be **moderate**, **moderate-minor** or **minor** and **not significant** or where there will be no visibility there will be **no effect**. The effects will be adverse, short term in respect of the construction phase and long term in respect of the operational phase, and reversible.

235. The significant effect will gradually reduce to a **not significant** effect at a **moderate-minor** or **minor** level after an approximate 15-year period during which mitigation planting will grow to create an effective screen between the OnSS and the surrounding local landscape.

7.2.5 Weston Marsh Local Landscape Character Area

7.2.5.1 Baseline

236. The Weston Marsh LLCA lies in an area of land to the immediate east of the River Welland and Macmillan Way and to the west of the B1357 and A17. The Weston Marsh LCCA is defined by the combination of the low-lying and level landform and extensive arable farmland. Large

fields of predominantly arable crops and occasionally pasture, create a geometric pattern across the rural landscape. Ditches and rivers follow this pattern, and the limited presence of hedgerows and tree cover creates an open and exposed character.

237. One of the key features in this landscape is the River Welland which forms the western extent of the LCCA and which flows through an elevated channel with embankments on either side. The Macmillan Way follows the river and affords elevated and open views across Surfleet Marsh to the west and Weston Marsh to the east. The other key feature is the overhead electricity transmission lines, with one extending from northwest to southeast and another connecting in from the southwest.

238. Settlement in the LCCA mainly comprises farmsteads, which although dispersed across the landscape, present concentrations of large farm sheds. Other rural properties occur either in isolated locations or small clusters along Carrington Road to the east and although they are mostly enclosed by garden vegetation, some experience an open aspect.

7.2.5.2 Sensitivity

239. The value of the Weston Marsh LLCA is medium. There are no landscape planning designations covering this LLCA which would otherwise denote a special scenic value.

240. The susceptibility of this LLCA to the effects of the OnSS is medium. The OnSS will not be located in this LLCA but in the adjacent Surfleet and Gosberton Marsh LLCA to the west of the River Welland. The Weston Marsh LLCA comprises a predominantly rural landscape with limited occurrence of other large scale energy developments. This landscape has, however, been heavily modified by agricultural practices and there are very few natural or semi-natural areas. There are also the overhead electricity transmission lines which pass through the LCCA, and the influence from settlements, roads.

241. The combination of the medium value and the medium susceptibility gives rise to an overall **medium** sensitivity.

7.2.5.3 Magnitude of Change

242. The magnitude of change during both the construction and operational phases will be **medium-low** or **low** and with **no change** occurring in areas where there will be no visibility. The ZTV on Figure 28.9 (document reference 6.2.28.9), shows variable extents of visibility across the LLCA owing principally to the screening effect of the River Welland embankment and also tree cover and buildings across both Surfleet Marsh and Weston Marsh. Along the western part of the LLCA there will be no visibility of the OnSS owing to the screening effect of the intervening embankments along the River Welland and, therefore, no change will occur.

243. Visibility of the OnSS occurs within the LLCA from a range of approximately 2 km although visibility will typically comprise only the upper parts of the OnSS owing again to the screening effect of the intervening River Welland embankment. Here, the magnitude of change will be medium-low owing to the limited influence of the OnSS on the character of this part of the LLCA. While those parts of the LLCA further east will experience a reduced screening effect from the River Welland embankment, the increased separation distance from the OnSS and the

greater accumulation of intervening tree cover will keep the magnitude of change at medium-low. Across the more distant northern, eastern and southern parts of the LLCA, the magnitude of change will drop to low owing to the very limited visibility and therefore limited influence of the OnSS on landscape character. There will be no effect in those parts of the LLCA where there will be no visibility.

244. The mitigation planting shown on Figure 28.15 (document reference 6.2.28.15) comprises shelterbelts of woodland and hedgerows that surround the OnSS and will create an effective screen from the surrounding landscape. During the approximate 15 year period of growth, the mitigation planting will reduce the medium-low or low magnitude of change on the Weston Marsh LLCA to low or negligible.

7.2.5.4 Significance of Effect

245. The overall effect of the construction and operational phases of the OnSS on the Weston Marsh LLCA will be **not significant** at a **moderate-minor** or **minor** level. This assessment relates chiefly to the limited extent to which the OnSS will be visible across this LLCA owing to the screening effect of the intervening embankment along the River Welland, as well as tree cover and, to a lesser extent, rural buildings.

246. The significant effect will remain not significant effect but reduce to at **minor** level after an approximate 15 year period during which mitigation planting will grow to create an effective screen between the OnSS and the surrounding local landscape.

7.2.6 Summary of Effects on Landscape Character

247. No significant effects on landscape character will arise as a result of the construction of the landfall, onshore ECC or 400kV cable corridor as a result of operational effects associated with these components of the onshore infrastructure. This assessment relates to the relatively small scale of the construction works in respect of the broad landscape character areas and their baseline character which is defined by arable farmland which is routinely disturbed by heavy machinery as part of agricultural practices.

248. In respect of the OnSS, this is situated in the Fens NCA which extends from Skegness in the north to Cambridge in the south, and from Peterborough in the west to Kings Lynn in the east. For the purposes of the LVIA, two LLCAs were identified in the OnSS study area in order to enable a more detailed assessment.

249. The assessment has shown that there will be localised effects on the Surfleet and Gosberton Marsh LLCA within which the OnSS will be located. These effects will be major or major-moderate and significant out to approximately 1.3km to the north and northwest, 1.4km to the west, 1.6km to the northeast and east, 1.4km to the southeast, 1.6km to the south and 0.8km to the southwest. The effects beyond these extents will either be moderate, moderate-minor or minor and not significant or where there will be no visibility there will be no effect. The effects will be adverse, short term in respect of the construction phase and medium or long term in respect of the operational phase, and reversible.

250. There will be no significant effects on the Weston Marsh LLCA which lies to the east of the River Welland. This assessment relates to a combination of the increased separation distance from the OnSS, and the screening effect of the River Welland embankment and other tree cover and buildings.

251. There will be no significant effects on landscape planning designations, such as AONBs and RPGs, owing to none occurring within the LVIA study area.

252. Where significant effects on landscape character will arise, these effects will be either medium or long term as mitigation planting will reduce the influence of the OnSS on the Surfleet and Gosberton Marsh LLCA to not significant between 5 and 15 years of the operational phase. Once established and with 5 to 15 years of growth, the mitigation planting will effectively create a screen around the OnSS that will reduce its influence on local landscape character. Mitigation planting is described in section 5 and in the OLEMS (document reference 8.10).

7.3 Impact Assessment: Visual Amenity

7.3.1 Introduction

253. Visual receptors within the LVIA study area, including residents, road-users and walkers, are assessed to identify which have potential to be significantly affected by the onshore elements of the Project. The assessment of effects on visual amenity is considered firstly, in respect of the landfall, onshore ECC and 400kV cable corridor and secondly, in respect of the OnSS.

7.3.2 Landfall, Onshore ECC and 400kV Cable Corridor

7.3.2.1 Introduction

254. The potential effects of the construction of the landfall, onshore ECC and 400kV cable corridor on visual receptors are likely to be limited in occurrence and extent owing to the following factors:

- the extent of land affected will be limited to the TCCs and the typically 80m working width of the onshore ECC and the typically 60m working width of the 400kV cable corridor;
- the construction works will all be at, or below, ground level with the most visible elements being the TCCs and the machinery required for the construction of trenches and trenchless crossings;
- the construction works will occur on land that is routinely worked by machinery and where there is very little permanent vegetation;
- farms typically comprise large sheds and the arable farming uses heavy machinery in the fields and HGVs to transport goods to and from the farms, which give the rural landscape a more developed character;

- settlement along the onshore ECC and 400kV cable corridor is typically small in scale, contained in extent and sparse in occurrence, with vegetation often enclosing the outer boundaries;
- rural properties typically have enclosure from vegetation intended to provide shelter but which also reduces the extent of views of the surrounding landscape;
- the onshore ECC and 400kV cable corridor have been routed to avoid settlement and keep a minimum 100m separation from most rural properties;
- the extensive use of trenchless crossings means that the majority of the land will remain undisturbed, including the trees and hedgerows associated with the roads and drains that will be drilled under; and
- The extent of tree cover, hedgerows and other semi-natural areas is very limited in this landscape, especially where marshland has been reclaimed for agricultural land uses.

255. The combination of the baseline characteristics of the rural landscape, the relatively small scale of the construction works and the sensitive routing of the onshore ECC and 400kV cable corridor means that there will be very few changes to the physical elements of the landscape, as assessed in section 7. The limited change to the landscape means that in turn there will be a limited change to people's visual amenity and the potential for significant effects will only arise in particular situations where the TCCs or construction works occur in close proximity to visual receptors, such as residents, road-users or walkers and / or where mature tree cover or hedgerow is removed.

256. Table 7.1: Assessment of Visual Effects during Construction of Landfall, Onshore ECC sets out those visual receptors with potential to be significantly affected by the construction of the landfall, onshore ECC or 400kV cable corridor in respect of the 14 segments which the onshore construction works are divided into.

Table 7.1: Assessment of Visual Effects during Construction of Landfall, Onshore ECC and 400kV cable corridor

Visual Receptors / Baseline	Onshore components	Sensitivity	Magnitude of Change	Significance of Effect
Segment 1: Landfall to A52 – Hogsthorpe				
Road-users on Roman Bank. There is no enclosure along the western roadside such that views into the landfall site will be open.	Landfall Primary TCC [PCC-1]- Wolla Bank	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this coastline. Medium susceptibility owing to the predominantly rural character of views in this area and proximity to the landfall Primary TCC, despite the short term and transitory nature of the views.	**Medium-high** Roman Bank passes adjacent to the eastern boundary of the landfall site over an approximate 500m length. While there is currently no enclosure along this boundary, a 4m high noise bund will be constructed and while this will screen views into the landfall site, it will form a prominent and close-range feature that will enclose the views of road-users. There is also the potential that road-users will experience views into the landfall site where the road extends to the north and south beyond the noise bund. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the baseline coastal landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the road, intensively farmed farmland and built development further north and south.	**Moderate (Significant)** The combination of the medium sensitivity and the medium-high magnitude of change will lead to a moderate effect. This effect will be localised over an approximate 1.1 km stretch of Roman Bank that lies adjacent and to the north and south of the landfall site. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Walkers on PRoWs. Public access extends along the northern, southern and western boundaries of the Landfall Primary TCC, with the western boundary crossed by the access road from the west. The PRoWs are Ande 19/2 to the north, Ande 19/3 to the west and Chap 21/1 and 21/2 to the south.	Landfall Primary TCC [PCC-1] - Wolla Bank and Secondary TCC [SCC-2]	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this coastline. Medium-high susceptibility owing to the predominantly rural character of views in this area, proximity to the landfall site, and heightened awareness of surroundings despite the short term and transitory nature of the views.	**Medium-high** The PRoWs pass adjacent to the southern and western boundaries of the landfall site and extend across the local landscape to the north and south. There is no enclosure along the PRoWs and the openness of the landscape means that clear views into PCC-1 will be experienced by walkers. The Cable Duct Storage [SCC-2] will also be readily visible, occupying a long narrow site that extends up to approximately 1km to the west of the landfall site. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the baseline coastal landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the road, intensively farmed farmland and built development further north and south.	**Major- moderate (Significant)** The combination of the medium-high sensitivity and the medium-high magnitude of change will lead to a major- moderate effect. This effect will be localised along the southern and western site boundaries and extending approximately 400 m to the north and south. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Walkers on England Coast Path. The adjacent section of the path passes through the coastal dunes, slightly elevated above the beach to the east and the	Landfall Primary TCC [PCC-1]- - Wolla Bank and Secondary TCC [SCC-2]	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this coastline. Medium-high susceptibility owing to the predominantly rural character of	**Medium-high** Although the England Coast Path is offset a minimum of approximately 240 m to the east of the eastern boundary of the landfall site, it will be partly visible owing to the slightly elevated position of the path through the dunes and the open character of the coastal landscape, despite the enclosure of the 4m noise bund adjacent to Romand Bank.	**Major-moderate (Significant)** The combination of the medium-high sensitivity and the medium-high magnitude of change will lead to a major-moderate effect. This effect will be localised along an approximate 800 m section of the England Coast Path set between Wolla Bank Car Park to the south and Anderby Creek to the

Visual Receptors / Baseline	Onshore components	Sensitivity	Magnitude of Change	Significance of Effect
marshland / scrubland to the west.		views in this area, elevated views towards the landfall site, and heightened awareness of surroundings despite the short term and transitory nature of the views.	The Cable Duct Storage [SCC-2] will be more readily visible as it will extend approximately 1km west from the landfall site. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the baseline coastal landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the road, intensively farmed farmland and built development further north and south.	north. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Residents on Bracken Lane. There are a small number of properties on Bracken Lane and while their views are partly enclosed by garden vegetation there is the potential that they could gain visibility of the nearby TCC.	Onshore ECC / Primary TCC A52 Hogsthorpe[PCC-3] South End	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations in this rural landscape. High susceptibility owing to the long term and potentially long duration of views from internal and external living spaces.	**Medium-low** The onshore ECC will run parallel to Bracken Lane on the western side, while the residential properties are located set within garden grounds on the eastern side. The use of trenchless technique will mean that no construction works will occur on the land adjacent to Bracken Lane, and therefore the effect in relation to the onshore ECC will be limited and relate to the more distant primary TCC on the A52 South End and smaller TCCs to the north will be visible. The separation distance between the properties and the TCC of more than 100 m, combined with the baseline influence from the road and the screening effect of intervening garden vegetation that will provide a partial screen from the garden and ground floor windows, moderates the magnitude of change on the views of residents.	**Moderate (Not significant)** The combination of the medium-high sensitivity and the medium-low magnitude of change will lead to a moderate effect. This effect will be localised to the short section of Bracken Lane where residential properties occur. The effect will be adverse, short-term over the 51 month construction period and reversible. The land at the TCC will be reinstated as arable farmland post construction.
Road users on A52 South End which is the main road connecting Skegness with Mablethorpe to the north and is largely open with some enclosure from low roadside hedgerows and occasional scrubby vegetation.	Primary TCC A52 Hogsthorpe [PCC-3] South End	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium** South End (A52) passes adjacent to the southern boundary of the Primary TCC along an approximate 100 m length. While there is some enclosure from hedgerow, the gap and low height mean that road-users will experience views into the TCC. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the road, intensively farmed farmland and built development within the surrounding landscape.	**Moderate (Significant)** The combination of the medium sensitivity and medium magnitude of change will give rise to a moderate effect. This effect will be localised along the approximate 100 m length adjacent to the southern boundary and an additional approximate 50 m to the west. To the east the views of road-users are screened by vegetation around a road-side plot containing a caravan. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Segment 2: A52 – Hogsthorpe to Marsh Lane				
Road-users on Marsh Lane which is a main road with limited enclosure other than intermittent	Secondary TCCs Marsh Lane near Skegness Stadium [SCC-4 and SCC-5]	**Medium** Medium value owing to the absence of formal viewpoints and absence of	**Medium** The Secondary TCCs an CICsa are located to both the north and the south of Marsh Lane, with the road passing through the middle over an approximate 100 m length. While there is	**Moderate (Significant)** The combination of the medium sensitivity and medium magnitude of change will give rise to a moderate effect. This effect will be localised along

Visual Receptors / Baseline	Onshore components	Sensitivity	Magnitude of Change	Significance of Effect
hedgerow along the northern side and scrubby vegetation along the bend in the road to the east.		scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	some enclosure from hedgerow on the northern side of the road, there are gaps that mean road-users will experience views into the TCC. The southern roadside is open and road-users will have clear views into this part of the TCC. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the rural character of the farmed landscape, although this effect will be moderated by the Skegness Speedway a further 160 m west along the road.	the approximate 100 m length adjacent to the northern and southern boundaries and an additional approximate 50 m to the west. To the east the views of road-users are screened by a bend in the road and vegetation along the roadside The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Segment 3: Marsh Lane to A158 – Skegness Road and Section 4: A158 – Skegness Road to Low Road				
Road-users on A158 which is the main road between Skegness and Lincoln and which is partly enclosed by intermittent tree cover set in a wide grass verge on the northern side of the road and around the laybys on the southern side of the road.	Secondary TCCs A158 Skegness Road [SCC-6 and SCC-7]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium-high** The Secondary TCCs and CICs are located to both the north and the south of the A158 Skegness Road, with the road passing through the middle over an approximate 100 m length. While there is some enclosure from intermittent formal trees on the northern side of the road, there are gaps that mean road-users will experience views into the TCC. The southern roadside is open and road-users will have clear views into this part of the TCC. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the rural character of the farmed landscape, although this effect will be moderated by the presence of the road and the extent to which the farmland is modified by intensive practices.	**Moderate (Significant)** The combination of the medium sensitivity and medium magnitude of change will give rise to a moderate effect. This effect will be localised along the approximate 100 m length adjacent to the boundaries of the Secondary TCCs and CICS and an additional approximate 100 m to the west where the road is straight, and views are open apart from where hedgerow and tree cover provide enclosure on the northern side. To the east the views of road-users are screened by the bend in the road and hedgerow and tree cover along the southern side of the road such that the effect will only extend for a further approximate 50m in this direction The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Segment 5: Low Road to Steeping River				
Road-users on A52 Croft Bank which is the main road between Skegness and Boston and which in this section is largely open on the southern side and enclosed by low hedgerow on the northern side	Primary TCC A52 Croft Bank [PCC-8]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium-high** Croft Bank (A52) passes adjacent to the southern boundary of the TCC along an approximate 150 m length. While there is some enclosure from hedgerow along this northern side of the road, the gaps and relatively low height mean that road-users will experience views into the TCC. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the	**Moderate (Significant)** The combination of the medium sensitivity and medium-high magnitude of change will give rise to a moderate effect. This effect will be localised along the approximate 150 m length adjacent to the southern boundary and an additional approximate 100 m to the west, as far as Bank House where mature tree cover presents a screen and 50 m to the east beyond which the bend in the road and hedgerow moderate the extents of visibility. The effect will be adverse, short-term

Visual Receptors / Baseline	Onshore components	Sensitivity	Magnitude of Change	Significance of Effect
			road, intensively farmed farmland and built development within the surrounding landscape.	over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Residents on Croft Bank which comprise Halfway House to the immediate east of the Primary TCC and a cluster of properties around Bank House to the west.	Primary TCC A52 Croft Bank [PCC-8]	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations in this rural landscape. High susceptibility owing to the long term and potentially long duration of views from internal and external living spaces.	**High** and **Low** The magnitude of change in respect of Halfway House will be high owing to the proximity of this house to the TCC, its principal orientation to the southwest where the TCC will be located, and the insufficient screen presented by the low hedgerow along the northern road-side. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change in respect of Bank House Cottage and Bank House approximately 1.3 km to the west will be low owing to the greater separation distance and the enclosure of the properties by mature tree cover.	**Major (Significant)** or **Moderate-minor (Not significant)** The effect on Halfway House will be major owing to its close proximity to the TCC, its orientation towards the TCC and the limited enclosure from the roadside hedgerow. The effect on the other properties in the area will be moderate-minor owing to the greater separation distances and enclosure from tree cover. All effects will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Road-users on Wainfleet Road (B1195) which in this section has no enclosure on the southern side where the Primary TCC will be located and some intermittent scrubby hedgerow on the northern side.	Primary TCC Wainfleet Road [PCC-9]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium-low** The TCC is located to the south of the road with a minimum separation distance of approximately 160m. The magnitude of change will be medium-low with the medium part of the rating relating to the openness of the views from the road and the contrasting feature that the TCC will present in the rural landscape. The low part of the rating relates to the separation distance which will reduce the presence and influence of the TCC and the oblique angle road-users will be travelling in relation to the position of the TCC.	**Moderate-minor (Not significant)** The combination of the medium sensitivity and the medium-low magnitude of change will lead to a moderate-minor effect. The effect will be adverse, short-term over the 42 month construction period and reversible. The land at the TCC will be reinstated as arable farmland post construction.
Residents on Wainfleet Road which comprise three semi-detached and two-storey houses with some enclosure from garden vegetation.	Primary TCCWainfleet Road [PCC-9]	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations in this rural landscape. High susceptibility owing to the long term and potentially long duration of views from internal and external living spaces.	**Medium-low** The magnitude of change on residents in the row of semi-detached properties on Wainfleet Road is assessed as medium-low owing to a combination of the minimum separation distance of approximately 360 m, their orientation to the south while the TCC will be located to the west and the baseline influence from the road, the pole mounted lines in this area, the intensively farmed land and the engineered embankments to the Wainfleet Relief Channel. The assessment also recognises the visibility that will be experienced from the garden grounds and the absence of any vegetative screening across the farmland.	**Moderate (Not significant)** The combination of the medium-high sensitivity and the medium-low magnitude of change will lead to a moderate effect. The effect will be adverse, short-term over the 42 month construction period and reversible. The land at the TCC will be reinstated as arable farmland post construction.
Segment 6 and Segment 7: Ivy House Farm / Marsh Yard to Staples Farm				

Visual Receptors / Baseline	Onshore components	Sensitivity	Magnitude of Change	Significance of Effect
Road-users on Fodder Dike Bank which is minor rural road with no enclosure from hedgerows or other roadside vegetation in this section.	Secondary TCC Fen Bank [SCC-12]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium** The magnitude of change will be medium owing to the location of the Secondary TCC to the immediate south of this minor road, which means it will form a readily visible feature in the views of road-users. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The Secondary TCC will line the north and south of the road over an approximate length of 40m. The magnitude of change is prevented from being rated medium-high owing to the relatively contained extent of the TCC and the baseline influence of the intensively farmed farmland.	**Moderate (Significant)** The combination of the medium sensitivity and medium magnitude of change will give rise to a moderate effect. This effect will be localised along the approximate 40m length of Fen Bank that is adjacent to the TCC and an additional approximate 50m to the west and east over which the TCC will form a notable feature in the open rural landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Road-users on Skirmore Lane / Howgarth Road which are rural minor roads passing through open rural farmland with the exception of some roadside vegetation associated with rural properties accessed from these roads.	Secondary TCC and Access Track - Skirmore Road [SCC-13]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium-low** The magnitude of change will be medium-low. The medium part of the rating relates to the openness of the views from the road and the variance that the Seondary TCC will present in contrast to the rural character of the farmland. The low part of the rating relates to the separation distance of more than 110m between the roads and the Secondary TCC which will reduce its prominence in the views of road-users, as well as from the baseline influence from the heavily modified agricultural landscape.	**Moderate-minor (Not significant)** The combination of the medium sensitivity and medium-low magnitude of change will give rise to a moderate-minor effect. The Secondary TCC will not redefine the views of road-users owing to the temporary and transitory nature of their views, the separation distance of the TCC from the road and the baseline influence from this heavily modified landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction.
Residents on Skirmore Lane / Howgarth Road	Secondary TCC and Access Track - Skirmore Road [SCC-13]	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations in this area. High susceptibility of residents owing to the long duration and long-term nature of their views as well as their open aspect across adjacent farmland.	**Medium-low or Low** The magnitude of change will be medium-low. The Secondary TCC will be located approximately 200m to the west of the cluster of properties on Howgarth Road and 190m to the north of Skirmore House, which means it will appear as a relatively distance feature. The magnitude of change will also be moderated by the enclosure from garden vegetation around the properties on Howgarth Road and the section of hedgerow adjacent to Skirmore House on Skirmore Lane and the baseline influence from the intensively farmed farmland. Although the Secondary TCC will appear at variance with the predominantly rural character of this farmed landscape. It will be too distant to redefine the character of residents' views.	**Moderate or Moderate-minor (Not significant)** The combination of the medium-high sensitivity and medium-low or low magnitude of change will give rise to a moderate or moderate-minor effect. The Secondary TCC will not redefine the views of residents owing to the separation distance of the TCC from the properties and the baseline influence from this heavily modified landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Segment 8: Staples Farm to Crowhall Lane				

Visual Receptors / Baseline	Onshore components	Sensitivity	Magnitude of Change	Significance of Effect
Road-users on Double Bank which is a minor rural road forming a long straight route through large fields of arable farmland with no enclosure on either side.	Primary TCC Double Bank [PCC-14]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium-high** The magnitude of change will be medium-high owing to the location of the Primary TCC to the immediate west of Double Bank and CICs offset approximately 20m to the west and 40m to the east of the road. The roadside is open such that road-users will experience clear views into the TCC and CICs with the western side adjacent to the TCC over an approximate 110m length. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the road and intensively farmed farmland.	**Moderate (Significant)** The combination of the medium sensitivity and medium-high magnitude of change will give rise to a moderate effect. This effect will be localised along the approximate 110m length adjacent to the western TCC and an additional approximate 50m to the north and south over which the TCC will form a notable feature in the open rural landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Segment 9: Crowhall Lane to Church End Lane				
Road-users on Ings Road which is a minor rural road forming a long straight route through large fields of arable farmland with no enclosure on either side.	Secondary TCCs Ings Road [SCC-15 and SCC-16]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium-high** The magnitude of change will be medium-high owing to the location of Primary TCCs to the immediate west and east of Ings Road and CICs offset approximately 40m either side of the road. The roadside is open such that road-users will experience clear views into the TCCs. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the road and intensively farmed farmland.	**Moderate (Significant)** The combination of the medium sensitivity and medium-high magnitude of change will give rise to a moderate effect. This effect will be localised along the approximate 120m length adjacent to the eastern TCC and an additional approximate 50m to the north and south over which the TCC will form a notable feature in the open rural landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Road-users on the A52 which is the main road between Skegness and Boston and which has open roadside to the north and south with street lights on the north and a pole-mounted line to the south.	Primary TCCs A52 near Haltoft End [PCC-17 and PCC-18]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium-high** The magnitude of change will be medium-high owing to the location of Primary TCCs to the immediate north and south of the A52 and CICs offset approximately 30m either side of the road. The roadside is open such that road-users will experience clear views into the TCCs. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the road and intensively farmed farmland.	**Moderate (Significant)** The combination of the medium sensitivity and medium-high magnitude of change will give rise to a moderate effect. This effect will be localised along the approximate 80m length adjacent to the TCCs and an additional approximate 50m to the west and east over which the TCC will form a notable feature in the open rural landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.

Visual Receptors / Baseline	Onshore components	Sensitivity	Magnitude of Change	Significance of Effect
Segment 10: Church End Lane to The Haven				
Road-users on Cut End Road / Woad Lane which are two rural roads with the Primary TCC located in the apex where Woad Lane joins Cut End Road.	Secondary TCC Cut End Road / Woad Lane [SCC-19]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium** The magnitude of change will be medium owing to the location of the Primary TCC in the apex between Woad Lane to the west and Cut End Road to the east. There will also be CICs relating to the trenchless techniques used in the fields to the west and east of the Primary TCC. The road-sides are open such that road-users will experience clear views into the TCCs. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the road and intensively farmed farmland.	**Moderate (Significant)** The combination of the medium sensitivity and medium magnitude of change will give to a moderate effect. This effect will be localised along the approximate 80m length of Cut End Lane and 130m length of Woad Lane adjacent to the primary TCC and an additional approximate 50m to the south of both these roads over which the TCC and CICs will form a notable feature in the open rural landscape. To the north, a combination of tree cover and buildings reduces the extent to which the TCC and CICswill be visible. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Road-users on Southfield Lane which is a minor rural road providing access to a small number of rural properties with an open section to the west of the Primary TCC and enclosure from hedgerows further to the south.	Secondary TCC Southfield Lane [SCC-20]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium** The magnitude of change will be medium owing to the visibility of the Primary TCC and adjacent CIC to the east of this minor road and the openness of the landscape which means that it will form a readily visible feature, albeit only within an approximate 70m section beyond which roadside hedgerows create enclosure. The separation distance of approximately 80m will, however, mean that the TCC will not appear close range to road-users, and the baseline influence from the intensively farmed land will moderate the additional effect of the TCCs.	**Moderate (Not significant)** The combination of the medium sensitivity and medium magnitude of change will give to a moderate effect. The TCCs will not redefine the views of road-users owing to the temporary and transitory nature of their views, the separation distance of the TCCs from the road and the baseline influence from this heavily modified landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction .
Residents on Southfield Lane where there is a variable extent of enclosure around properties from garden vegetation.	Secondary TCC Southfield Lane [SCC-20]	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations in this area. High susceptibility of residents owing to the long duration and long-term nature of their views as well as their open aspect across adjacent farmland.	**Medium-low** or **Low** The magnitude of change in respect of the properties to the west of the TCC and CICs will be medium-low owing to the screening effect of the intervening roadside hedgerow, and the separation distance of approximately 85m, despite the orientation of the front of the properties towards the TCCs. The property to the north will undergo a low magnitude of change owing to the greater separation of approximately 110m, the orientation of the front of the property to the west and the screening effect of garden vegetation. The effect on a third property further southwest will be limited owing to the screening effect of intervening tree cover.	**Moderate (Not significant)** and **Moderate-Minor (Not significant)** The effect will be moderate in respect of the properties to the west where there is potential for views from the properties and gardens towards the TCCs although these will be screened by the intervening hedgerow and offset by 85m.The effect will be moderate-minor for the property to the north. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction.
Segment 11: The Haven to Marsh Road				

Visual Receptors / Baseline	Onshore components	Sensitivity	Magnitude of Change	Significance of Effect
Residents at Bleak House Farm which is located on the western side of The Haven with a relatively open aspect south across the adjacent farmland.	Secondary TCC The Haven [SCC-21]	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations in this area. High susceptibility of residents owing to the long duration and long-term nature of their views as well as their open aspect across adjacent farmland.	**Medium-high** The magnitude of change will be medium-high owing to the location of the CIC, associated with trenchless crossing, to the immediate south of Bleak House Farm and the Secondary TCC to the south of that. While there is some tree cover around the farm, the orientation of the properties is south towards where the TCC will be located. The temporary hard surface, combined with the presence of vehicles, plant and materials, and with site offices and welfare facilities also in the Secondary TCC beyond, these features will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change is prevented from being rated high owing to the baseline influence from the large farm sheds and yard as part of the farm to the immediate east.	**Major- moderate (Significant)** The combination of the medium-high sensitivity and medium-high magnitude of change will give rise to a major-moderate effect. This effect will cover the views of resident in the properties at Bleak House Farm from where there will be visibility of the TCC and CIC in the adjacent landscape to the south. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Road-users on Wyberton Road which is a minor road through rural farmland with enclosure from a mature hedgerow on the northern side but no enclosure on the southern side where the Primary TCC will be located.	Secondary TCCWyberton Road [SCC-22]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium** The magnitude of change will be medium owing to the location of the Secondary TCC to the immediate south of this minor road and the openness of the landscape which means that it will form a readily visible feature in the views of road-users. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The TCC will line the south of the road over an approximate length of 70m. The magnitude of change is prevented from being rated high owing to the relatively contained extent of the TCC and the baseline influence of the intensively farmed farmland.	**Moderate (Significant)** The combination of the medium sensitivity and medium magnitude of change will give to a moderate effect. This effect will be localised along the approximate 70m length of Wyberton Road and an additional approximate 50m to the west and east over which the TCC and CIC will form a notable feature in the open rural landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Segment 12: Marsh Road to Fosdyke Bridge				
Road-users on Marsh Road which is a minor road through rural farmland with no enclosure on either side.	Secondary TCCs Marsh Road [SCC-24 and SCC-25]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this minor road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium-high** The magnitude of change will be medium-high owing to the location of the Secondary TCCsto the immediate north and south of Marsh Road. The roadside is open such that road-users will experience clear views into the TCCs. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The TCCs will line the north and south of the road over an approximate length of 220m. The magnitude of change is prevented from being rated high owing to the baseline influence of the road and intensively farmed farmland.	**Moderate (Significant)** The combination of the medium sensitivity and medium-high magnitude of change will give to a moderate effect. This effect will be localised along the approximate 220m length adjacent to the TCCs and an additional approximate 50m to the west and east over which the TCC will form a notable feature in the open rural landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.

Visual Receptors / Baseline	Onshore components	Sensitivity	Magnitude of Change	Significance of Effect
Segment 13: Fosdyke Bridge to Surfleet Marsh				
Residents in Fosdyke Bridge where properties are set to the immediate west of the A17 and the north of the River Welland.	Secondary TCCs Fosdyke Bridge [SCC-27 and SCC-28]	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations in this area. Medium-high susceptibility of residents owing to the long duration and long-term nature of their views as well as the baseline influence from the busy A17 and development in this area.	**Medium-high** The magnitude of change will be medium-high owing to the location of CICs, a Secondary TCC and open-cut trenching set in the farmland to the immediate east of the A17 and immediate west of the Five Towns Drain, as well as the Primary TCC also to the immediate west of the Five Towns Drain and closer to the River Welland. Although there is some enclosure from trees around some of the houses, there is also the potential for open views across the adjacent landscape. The temporary hard surface, combined with the presence of vehicles, plant and materials, and site offices and welfare facilities in respect of the Primary TCC, will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the intensively farmed farmland and development and roads at Fosdyke Bridge.	**Major -moderate (Significant)** The combination of the medium-high sensitivity and medium-high magnitude of change will give rise to a major-moderate effect. This effect will cover the properties that lie between the A17 and the Five Towns Drain and despite the use of HDD between these properties, visibility of the TCCs and CICs in the adjacent landscape to the west and east will have a significant effect. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Walkers and Horse-riders on the Macmillan Way. The elevated position of the riverside walkways on both banks in this section affords open views across the surrounding agricultural landscape.	CICs River Welland / Open Cut Trenching	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations in this area. Medium-high susceptibility of walkers and horse-riders owing to their heightened awareness of their surroundings and predominantly rural character of the views despite the medium to short term and transitory nature of the views.	**Medium** The magnitude of change will be medium owing to the location of CICs and open-cut trenching set in the farmland to the north of the River Welland at a range of between approximately 50 and 200m. To the west of Fosdyke Bridge and to the west of where the Risegate Eua joins the River Welland, there are a series of CICs associated with the trenchless technique being used in these areas. The temporary hard surface, combined with the presence of vehicles, plant and materials, will appear at variance with the predominantly rural character of the farmed landscape. Open cut trenching will also be seen to run parallel to the north of the Macmillan Way over an approximate 1.6km. The magnitude of change is prevented from being rated high owing to the baseline influence of the intensively farmed farmland and development and roads at Fosdyke Bridge.	**Moderate (Significant)** The combination of the medium-high sensitivity and medium magnitude of change will give rise to a moderate effect. This effect will extend along an approximate 1.6km length from where the Risegate Eau joins the River Welland in the west to Fosdyke Bridge in the west, and from where the CICs and open cut trenching will form a notable feature in the open rural landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Segment 14: Surfleet Marsh to Weston Marsh				
Walkers and Horse-riders on the Macmillan Way. The elevated position of the riverside walkways on both banks in this section affords open views across	CIC River Welland / Open Cut Trenching	**Medium-high** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations in this area. Medium-high susceptibility of walkers and horse-riders owing to their	**Medium** The magnitude of change will be medium owing to the location of CICs and open-cut trenching set in the farmland to the north and south of the River Welland and not immediately adjacent to the paths. The section of the Macmillan Way affected by a medium magnitude of change will extent to approximately 140m from which the CICS and	**Moderate (Significant)** The combination of the medium-high sensitivity and medium magnitude of change will give rise to a moderate effect. This effect will extend along an approximate 140m length of the Macmillan Way from where the CICs and open cut trenching will form a notable feature in the open rural landscape.

Visual Receptors / Baseline	Onshore components	Sensitivity	Magnitude of Change	Significance of Effect
the surrounding agricultural landscape.		heightened awareness of their surroundings and predominantly rural character of the views despite the medium to short term and transitory nature of the views.	open-cut trenching will be readily visible. The temporary hard surface, combined with the presence of vehicles, plant and materials, will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the intensively farmed farmland.	The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.
Road-users on Marsh Road. This road is open and straight such that road-users gain clear views along a notable stretch.	Secondary TCC Marsh Road [SCC-32]	**Medium** Medium value owing to the absence of formal viewpoints and absence of scenic landscape designations along this main road. Medium susceptibility owing to the short term and transitory nature of the views, despite the predominantly rural character of the views of road-users.	**Medium** The magnitude of change will be medium owing to the location of Primary TCC on the northern side of Marsh Road. The TCC will be divided by a section of trenchless technique, albeit with haul roads drawn off Marsh Road to both the north and south from this location. The section of Marsh Road with TCC or access track adjacent will be approximately 160m. The temporary hard surface, combined with the presence of vehicles, plant, materials, site offices and welfare facilities will appear at variance with the predominantly rural character of the farmed landscape. The magnitude of change is prevented from being rated high owing to the baseline influence of the road and intensively farmed farmland.	**Moderate (Significant)** The combination of the medium sensitivity and medium magnitude of change will give rise to a moderate effect. This effect will be localised along the approximate 160m length adjacent to the TCC and access track and an additional approximate 50m to the north and south over which the TCC will form a notable feature in the open rural landscape. The effect will be adverse, short-term over the 42 month construction period and reversible. The land will be reinstated as arable farmland post construction reducing the significant effect to not significant.

7.3.3 OnSS

7.3.3.1 Introduction

257. This section of the LVIA focusses on the visual effects of the OnSS during the construction and operational phases. The OnSS is located at Surfleet Marsh, and this is shown, along with the indicative layout for the mitigation planting, on Figure 28.15 (document reference 6.2.28.15). The assessment considers a MDE based on the footprint of the AIS and the height of the GIS and is illustrated in the photomontages in Figures 28.17 to 28.27 (document reference 6.2.28.17 to 6.2.28.27) as a white dashed line defining the maximum extents of the OnSS. Indicative models are also represented in the photomontages for the AIS OnSS and GIS OnSS but these are purely to give an impression of the typical appearance of these types of development and are presented within the MDE defined by the white dashed line.

258. Table 7.2: Viewpoint Visualisations Figure References sets out the figure references for the viewpoint visualisations.

259. The visual effects of the OnSS during the decommissioning phase will be the same or less than those identified during the construction phase, as described at section 8 and are, therefore, not assessed in detail in this assessment.

Table 7.2: Viewpoint Visualisations Figure References

VP	Receptor	Existing	PDE with Indicative AIS ONSS Model	AIS ONSS Model with Mitigation Planting (15 years growth)	PDE with Indicative GIS ONSS Model	GIS ONSS Model with Mitigation Planting (15 years growth)
1	Marsh Lane near Manor House	28.17a	28.17b	28.17c	28.17d	28.17e
2	A16 near Marsh Lane junction	28.18a	28.18b	28.18c	28.18d	28.18e
3	A16 near Gosberton Bank junction	28.19a	28.19b	28.19c	28.19d	28.19e
4	Macmillan Way near Ship Inn	28.20a	28.20b	28.20c	28.20d	28.20e
5	Macmillan Way near Welland House Farm	28.21a	28.21b	28.21c	28.21d	28.21e
6	Reservoir Road, Surfleet Seas End	28.22a	28.22b	28.22c	28.22d	28.22e
7	Wragg Marsh, Marsh Road	28.23a	28.23b	28.23c	28.23d	28.23e

VP	Receptor	Existing	PDE with Indicative AIS ONSS Model	AIS ONSS Model with Mitigation Planting (15 years growth)	PDE with Indicative GIS ONSS Model	GIS ONSS Model with Mitigation Planting (15 years growth)
8	Cook's Road, Gosberton Marsh	28.24a	28.24b	28.24c	28.24d	28.24e
9	Cunsdike Lane, Gosberton Marsh	28.25a	28.25b	28.25c	28.25d	28.25e
10	Willow Farm, Sutterton Dowdyke	28.26a	28.26b	28.26c	28.26d	28.26e
11	Gosberton	28.27a	28.27b	28.27c	28.27d	28.27e

7.3.3.2 Viewpoint 1: Marsh Lane near Manor House

Baseline

260. This viewpoint is located near Manor House on Marsh Lane, which extends east from the A16 towards the River Welland. The view is representative of road-users on Marsh Lane and the small number of residents in this rural area. Views from Marsh Lane are mostly enclosed by hedgerows although with some notable open sections from which views extend across the open farmland to the south. Marsh Lane provides access to a small number of farmsteads and rural properties and although most are fairly well enclosed by mature vegetation, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces.

261. This view looks southwest across an open farmed landscape towards the site of the OnSS. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, in the close range, along Marsh Lane and in the middle range along more distant field boundaries. Built development is evident in the form of the overhead electricity transmission line seen to the south, and the small number of rural properties occurring intermittently across the farmed landscape. Although not readily visible, the noise of traffic on the A16 to the west is also evident. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

262. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

263. The susceptibility of residents is medium-high. There is the potential that views from

internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by mature trees and hedgerows which potentially restricts their views out.

264. The susceptibility of road-users is medium. There is the potential that views from Marsh Lane have the potential to be affected by the OnSS, especially in the open sections between the enclosure of the road-side hedgerow. The susceptibility of road-users is moderated by the transitory nature of their views and the extent of road-side enclosure along most of this route.

265. The combination of the medium value and the medium-high susceptibility of residents gives rise to a **medium-high** sensitivity. The combination of the medium value and the medium susceptibility of road-users gives rise to a **medium** sensitivity.

Magnitude of Change

266. The magnitude of change during the construction phase will be **medium-high**. This rating relates to a combination of the minimum separation of 0.8km between the nearest TCC to the northeast of the OnSS and the visual receptors represented by this viewpoint, the horizontal extent of the construction site and compound seen within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the southwest of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the presence of the overhead electricity transmission line across the middle ground and the extent to which this landscape has been modified by agricultural practices.

267. The magnitude of change during the operational phase will be **medium-high**. The photomontages on Figure 28.17b and Figure 28.17d (document reference 6.2.28.17) show the MDE with the full extents being readily visible. The openness of the view combined with the absence of intervening landform or vegetation, means that despite the minimum separation of 1.2km, the OnSS will present a new and defining feature that will appear prominent in this view. Although the presence of the overhead electricity transmission line, the medium to large scale of the fields, and the heavily modified state of the agricultural land, will moderate the influence of the OnSS to some extent, the contrast between the large scale and industrial character of the OnSS, as represented by the indicative models of the OnSS in the photomontages on Figure 28.17b and Figure 28.17d (document reference 6.2.28.17) compared to the relatively rural character of the baseline context, will be notable.

268. As shown in the photomontages on Figure 28.17c and Figure 28.17e (document reference 6.2.28.17), the mitigation planting along the intermediate field boundary will gradually come to screen most of the OnSS in views from this north easterly direction, although a small extent of the upper parts of the OnSS will still be visible above the planting around the OnSS, seen where a gap occurs in the tree cover along the intermediate boundary. Over the approximate 15 year period of growth, the mitigation planting will gradually reduce the medium-high magnitude of

change to **low**.

Significance of Effect

269. The effect of the OnSS is considered to be of a medium-high magnitude during both the construction and operational phase, and the sensitivity of residents and road-users is considered to be medium-high and medium, respectively. The effect of the OnSS on residents represented by this viewpoint will be **major-moderate** and the effect on road-users will be **moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.

270. The significant effect will gradually reduce to a **not significant** effect at a **moderate-minor** or **minor** level after an approximate 15 year period during which mitigation planting will grow to almost fully screen visibility of the OnSS from Marsh Lane and associated properties.

7.3.3.3 Viewpoint 2: A16 near Marsh Lane junction

Baseline

271. This viewpoint is located on the A16, where the junction east to Marsh Lane occurs. The view is representative of road-users on the A16 and the small number of residents in this rural area. In the section of the A16 to the north of the viewpoint, the views of road-users are largely contained by dense roadside planting on the eastern side, albeit relatively open on the western side. To the south of the viewpoint, roadside planting on the eastern side is more intermittent, such that views open up along notable sections from where the site of the OnSS is visible. The A16 is the main road between Grimsby in the north and Peterborough in the south and, as such, experiences heavy traffic flows. The roads off the A16 provide access to a small number of farmsteads and rural properties and although most of these are fairly well enclosed by vegetation, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces.

272. This view looks southeast across an open farmed landscape towards the site of the OnSS. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover in the close range along the A16 and Marsh Lane, and in the middle range along more distant field boundaries. Built development is evident in the form of an overhead electricity transmission line seen to the southeast, and the small number of farmsteads and rural properties occurring intermittently across the farmed landscape. A further notable influence comes from the presence and noise of traffic on the A16 to the immediate west. Overall, this is a view of a heavily modified farmed landscape with a predominant rural character, albeit influenced by the presence of the A16 and the overhead electricity transmission line.

Sensitivity

273. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

274. The susceptibility of road-users is medium. There is the potential that views from the A16

have the potential to be affected by the OnSS, especially in the long open sections to the south of the viewpoint where the views of road-users open up at close range towards the site of the OnSS. The susceptibility of road-users is moderated by the short-term and transitory nature of their views, the speed of traffic and busyness of this main road, and the extent of road-side enclosure along parts of this road.

275. The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by trees and hedgerows which potentially restricts their views out.

276. The combination of the medium value and the medium-high susceptibility of residents gives rise to a **medium-high** sensitivity, while the medium value and medium susceptibility of road-users gives rise to a **medium** sensitivity.

Magnitude of Change

277. The magnitude of change during the construction phase will be **high**. This rating relates to a combination of the minimum separation of 0.6km between the closest TCC on the northeastern side of the OnSS and the visual receptors represented by this viewpoint, the horizontal extent of the construction site and compound as seen within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the southeast of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the presence of the overhead electricity transmission line and the extent to which this landscape has been modified by agricultural practices.

278. The magnitude of change during the operational phase will be **high**. The photomontages on Figure 28.18b and Figure 28.18d (document reference 6.2.28.18) show the MDE with the full extents being visible and occupying a large proportion of the 53.5 degree photo frame. The openness of the view combined with the minimum separation of 0.6km between the visual receptors and the OnSS, means it will present a new and defining feature that will appear prominent in this view. Although the presence of the overhead electricity transmission line, the medium to large size of the fields and the heavily modified state of the agricultural land will moderate the effect of the OnSS to some extent, the contrast between the large scale and industrial character of the OnSS compared to the relatively rural character of the baseline context, will be notable and will form a new and defining feature in this view.

279. The magnitude of change after an approximate 5-to-15-year period will reduce to **negligible** or **no change**. This takes into account the close-range screening that the proposed mitigation planting will provide adjacent to Marsh Lane. This will screen visibility of the OnSS, as shown in the photomontages on Figure 28.18c and Figure 28.18e (document reference 6.2.28.18). Where planting is adjacent to visual receptors, the screen will be effective in the first

5 to 10 years and where the planting is slightly recessed from the visual receptors, this may take up to 15 years.

Significance of Effect

280. The effect of the OnSS is considered to be of a high magnitude during both the construction and operational phase, and the sensitivity of residents affected is considered to be medium-high and the sensitivity of road-users is considered to be medium. The effect of the OnSS on residents represented by this viewpoint will be **major** and the effect on road-users will be **major-moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.

281. The high magnitude of change will gradually reduce to negligible or no change over the approximate 5-to-15-year period during which mitigation planting will grow, and the effect will reduce to **not significant** at a **minor** level or there will be **no effect**.

7.3.3.4 Viewpoint 3: A16 at Surfleet Bank junction

Baseline

282. This viewpoint is located on the A16, where the junctions occur; east to Surfleet Bank and west to Gosberton Bank. The view is representative of road-users on the A16 and the small number of residents in this rural area. In the section of the A16 to the north of the viewpoint, the views of road-users are largely open owing to the intermittent occurrence of roadside planting on the eastern side. To the south of the viewpoint, there is an industrial development and other farmsteads that restrict the extent of views eastwards and then further south, roadside planting on the eastern side reduces the extent of views to shorter open sections.

283. The A16 is the main road between Grimsby in the north and Peterborough in the south and, as such, experiences fairly heavy traffic flows. The roads off the A16 provide access to a small number of farmsteads and rural properties and although most of these are fairly well enclosed by mature vegetation, there is the potential for views of the surrounding landscape to be experienced from internal and external spaces.

284. This view looks east across an open farmed landscape towards the site of the OnSS. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover along the A16 and Surfleet Bank in the close range, and along more distant field boundaries in the middle range. Built development is evident in the form of an overhead electricity transmission line seen to the north and extending east, the small number of farmsteads and rural properties occurring intermittently across the rural landscape, and the presence and noise of traffic on the A16 to the immediate west. Overall, this is a view of a heavily modified farmed landscape, with a rural character that is influenced by the presence of the A16 and the overhead electricity transmission lines.

Sensitivity

285. The value of the view is medium. There are no formal viewpoints or landscape planning

designations in this area which would otherwise denote a special visual amenity value.

286. The susceptibility of road-users is medium. There is the potential that views from the A16 have the potential to be affected by the OnSS, especially in the long open sections to the north of the viewpoint where the views of road-users open up obliquely towards the site of the OnSS. The susceptibility of road-users is moderated by the short-term and transitory nature of their views, the speed of traffic and busyness of this main road, and the extent of road-side enclosure along parts of this road.

287. The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by trees and hedgerows which potentially restricts their views out.

288. The combination of the medium value and the medium-high susceptibility of residents gives rise to a **medium-high** sensitivity, while the medium value and medium sensitivity of road-users gives rise to a **medium** sensitivity.

Magnitude of Change

289. The magnitude of change during the construction phase will be **medium-high**. This rating relates to a combination of the minimum separation of 0.9km between the closest TCC to the south of the OnSS construction and the visual receptors represented by this viewpoint, the horizontal extent of the construction site and compound as seen within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the northeast of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the close proximity of the overhead electricity transmission lines and the extent to which this landscape has been modified by agricultural practices.

290. The magnitude of change during the operational phase will be **medium-high**. The photomontages on Figure 28.19b and Figure 28.19d (document reference 6.2.28.19) show the MDE with the full extents readily visible. A temporary agricultural tent screens visibility of the eastern end of the OnSS layout and it is assumed for the purposes of this assessment that the full extents will be readily visible. The openness of the view combined with the absence of intervening landform or vegetation, means that despite the separation distance of 0.9km, the OnSS will present a new and defining feature that will appear especially prominent in this view. Although the roadside vegetation along the A16 will form an intermittent screen of the OnSS along sections, from the opening at the Surfleet Bank junction and the open road that extends east, the OnSS will form an especially large-scale feature and the access road into the OnSS will be seen within the close range.

291. The magnitude of change is prevented from being rated high by the close-range influence from the overhead electricity transmission line, with the large scale of the towers reducing the

perceived scale of the OnSS. Despite this scale comparison, the OnSS will form the new focus and defining feature of the view owing to its broad horizontal extent and the variance in its character relative to the existing rural landscape.

292. The magnitude of change after an approximate 5-to-15-year period will gradually reduce from medium-high to **low**. This takes into account the close-range screening that the proposed mitigation planting will provide on the southwest side of the OnSS, although a small extent of the upper parts of the OnSS will still be visible above the planting around the OnSS, seen where a gap occurs in the closer range tree cover. This will screen visibility of the OnSS, as shown in the photomontages on Figure 28.19c and Figure 28.19e (document reference 6.2.28.19). Where planting is adjacent to visual receptors, the screen will be effective in the first 5 to 10 years and where the planting is slightly recessed from the visual receptors, this may take up to 15 years.

Significance of Effect

293. The effect of the OnSS is considered to be of a medium-high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high for residents and medium for road-users. The effect of the OnSS on residents represented by this viewpoint will be **major-moderate** and the effect on road-users will be **moderate** in level, during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.

294. The medium-high magnitude of change will gradually reduce to a low magnitude of change over the approximate 5-to-15-year period during which mitigation planting will grow, and the effect will reduce to **not significant** at a **moderate-minor** or **minor** level.

7.3.3.5 Viewpoint 4: Macmillan Way at Surfleet Bank

Baseline

295. This viewpoint is located on the Macmillan Way, which follows the raised embankment on the western shore of the River Welland. It is located close to the Ship Inn on the northern side of the settlement named Surfleet Seas End. The view is representative of walkers on the Macmillan Way from where an elevated view extends out across the surrounding landscape. The view is also representative of the views of lower-lying road-users on the minor roads in this area and residents on the northern side of Surfleet Seas End and other properties in the local rural area.

296. This view looks north across an open farmed landscape towards the site of the OnSS. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields, although there is some enclosure from hedgerows and tree cover, visible along field boundaries in the middle and distant ranges. Built development is evident in the form of an overhead electricity transmission line seen to the north and routed northwest to southeast, and the small number of farmsteads and rural properties occurring intermittently. Human influences are also evident in the straight channel of the River Welland and the engineered embankments on either side. Overall, this is a view of a heavily modified farmed landscape, with a rural

character that is influenced by the presence of the channelised water course and the overhead electricity transmission lines.

Sensitivity

297. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

298. The susceptibility of walkers is medium-high. The path is situated along the top of the embankment where there is very little enclosing vegetation, with the result that walkers experience elevated and unobstructed views of the surrounding landscape. Although the views of walkers will be of a relatively short duration, they will typically have a heightened awareness of their surroundings that raises their susceptibility.

299. The susceptibility of road-users is medium. There is the potential that views from the minor roads in this area have the potential to be affected by the OnSS, especially from the long open sections of Marsh Drove to the north of the viewpoint where the views of road-users open up towards the site of the OnSS. The susceptibility of road-users is moderated by the transitory nature of their views, and the extent of road-side enclosure from embankments and vegetation along Surfleet Bank.

300. The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by other buildings and vegetation which may restrict their views out.

301. The combination of the medium value and the medium-high susceptibility of walkers and residents gives rise to a **medium-high** sensitivity. The medium value and the medium susceptibility of road-users gives rise to a **medium** sensitivity.

Magnitude of Change

302. The magnitude of change during the construction phase will be **medium-high**. This rating relates to a combination of the minimum separation of 0.8km between the closest TCC to the south of the OnSS and the visual receptors represented by this viewpoint, the horizontal extent of the construction site and compound as seen within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the northwest of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the presence of the overhead electricity transmission lines and the extent to which this landscape has been modified by agricultural practices and other human influences.

303. The magnitude of change during the operational phase will be **medium-high**. The photomontages on Figure 28.20b and Figure 28.20d (document reference 6.2.28.20) show the MDE, with the full extents readily visible. The openness of the view combined with the limited

presence of intervening vegetation, means that despite the separation distance of 1.2km, the OnSS will present a new and defining feature that will appear especially prominent in this view. There is very little enclosure from vegetation along the River Welland and as such, clear views of the OnSS will be experienced from the section of the Macmillan Way between Surfleet Seas End and Fosdyke Bridge, although the viewpoint represents a closer view and a higher magnitude of change than these more distant parts. It is in this context that the presence of the overhead electricity transmission line, the medium scale of the fields and heavily modified state of the agricultural land will do little to moderate the effect of the OnSS, which will form the focus and defining feature of the view.

304. The magnitude of change after an approximate 15-year period will gradually reduce from medium-high to **low**. The mitigation planting will screen the majority of the OnSS as illustrated by photomontages on Figure 28.20c and Figure 28.20e (document reference 6.2.28.20), with only the upper parts of the buildings remaining visible above the treeline. While there is the potential that fuller visibility would occur in the residential views from Big Tree Honey Farm (visible in the middle ground of the view) the extent of tree cover and hedges in the garden grounds combined with the mitigation planting, including hedgerow and woodland strips will reduce visibility sufficiently to reduce the magnitude of change to low after 15 years.

Significance of Effect

305. The effect of the OnSS is considered to be of a medium-high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on walkers and residents represented by this viewpoint will be **major-moderate** and the effect on road-users will be **moderate** in level, during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.

306. The medium-high magnitude of change will gradually reduce over the approximate 15-year period during which mitigation planting will grow and practically screen the OnSS, and the effect will reduce from **significant** to **not significant** at a **moderate-minor** or **minor** level.

7.3.3.6 Viewpoint 5: Macmillan Way near Welland House Farm

Baseline

307. This viewpoint is located on the Macmillan Way, which follows the raised embankment on the western shore of the River Welland. It is located to the south of Welland House Farm, from where the open and elevated track extends to both the southwest and northeast. The view is representative of walkers on the Macmillan Way from where an elevated view extends out across the surrounding landscape. The view is also representative of the views of lower-lying road-users on the minor roads in this area and residents in the local farmsteads and other properties in the local rural area.

308. This view looks west across an open farmed landscape towards the site of the OnSS. The landscape is flat and low-lying, and the view is characterised by the medium to large arable

fields, although there is some enclosure from hedgerows and tree cover, visible along field boundaries in the middle and distant ranges. Built development is evident in the form of an overhead electricity transmission line seen to the west and routed northwest to southeast, as well as the small number of farmsteads and rural properties occurring intermittently across the rural landscape. Human influences are also evident in the straight channel of the River Welland and the engineered embankments on either side. Overall, this is a view of a heavily modified farmed landscape, with a rural character that is influenced by the presence of the channelised water course and the overhead electricity transmission lines.

Sensitivity

309. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

310. The susceptibility of walkers is medium-high. The path is situated along the top of the embankment where there is very little enclosing vegetation, with the result that walkers experience elevated and unobstructed views of the surrounding landscape. Although the views of walkers will be of a relatively short duration, they will typically have a heightened awareness of their surroundings that raises their susceptibility.

311. The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around a lot of the properties by mature trees and hedgerows which may restrict their views out.

312. The susceptibility of road-users is medium. There is the potential that views from the minor roads in this area have the potential to be affected by the OnSS, especially from the long open sections of Marsh Drove to the southeast of the viewpoint where the views of road-users are open towards Weston Marsh. The susceptibility of road-users is, however, moderated by the short-term and transitory nature of their views.

313. The combination of the medium value and the medium-high susceptibility of walkers and residents gives rise to a **medium-high** sensitivity. The medium value and the medium susceptibility of road-users gives rise to a **medium** sensitivity.

Magnitude of Change

314. The magnitude of change during the construction phase will be **medium-high**. This rating relates to a combination of the minimum distance of 1.0km between the closest TCC to the south of the OnSS and the visual receptors represented by this viewpoint, the horizontal extent of the construction site and compound as seen within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the west of these visual receptors. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the presence of the overhead electricity transmission

line and the extent to which this landscape has been modified by agricultural practices and other human influences.

315. The magnitude of change during the operational phase will be **medium-high**. The photomontages on Figure 28.21b and Figure 28.21d (document reference 6.2.28.21) shows the MDE, with almost the full extents readily visible. The openness of the view combined with the limited presence of intervening vegetation, means that despite the separation distance of 1.3km, the OnSS will present a new and defining feature that will appear especially prominent in this view.

316. There is very little enclosure from vegetation along Macmillan Way and as such, clear views of the OnSS will be experienced from the section between Surfleet Seas End and Fosdyke Bridge, although the viewpoint represents a closer view and higher magnitude of change than these more distant parts. It is in this context that the presence of the overhead electricity transmission line, the medium scale of the fields and heavily modified state of the agricultural land will do little to moderate the effect of the OnSS, which will form the clear focus and defining feature of the view.

317. The magnitude of change after an approximate 15-year period will reduce from medium-high to **low**. The mitigation planting will screen all of the OnSS with the exception of the upper part of the buildings which have the potential to remain visible above the treeline, as shown in the photomontages on Figure 28.21c and Figure 28.21e (document reference 6.2.28.21).

Significance of Effect

318. The effect of the OnSS is considered to be of a medium-high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on walkers and residents represented by this viewpoint will be **major-moderate** and the effect on road-users will be **moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.

319. The magnitude of change will gradually reduce from **medium-high** to **low** during the approximate 15-year period during which mitigation planting will grow to largely screen the OnSS, and the effect will reduce from **significant** to not significant at a **moderate-minor** or **minor** level.

7.3.3.7 Viewpoint 6: Reservoir Road, Surfleet Seas End

Baseline

320. This viewpoint is located on Reservoir Road in the village of Surfleet Seas End, which is situated in the Lincolnshire Fens, approximately 5km north of Spalding. The village is located on the eastern side of the A16 from where it stretches along the course of the River Glen to where it converges with Vernatt's Drain and the River Welland. This gives the village a distinctly linear pattern with residential development set along Sea's End Road and Reservoir Road and with rows of properties fronting onto the riverside. The village is mostly inward looking and with

enclosure from surrounding buildings and vegetation. The viewpoint on Reservoir Road has been selected because of its slight raise in elevation at 7m AOD and the orientation of this one-sided section of the street to the northwest, which increases the potential for residents to view the OnSS to the north.

321. The view is representative of residents in the village, although visibility of the OnSS from other parts of the village will be less extensive owing to the enclosure from surrounding buildings and vegetation, as well as the screening effect of field boundary vegetation in the intervening farmland. While there is vegetation also along the northern side of this section of road, there is the potential for views to the north to be experienced from the adjacent properties and by road-users or walkers on the road.

322. This view looks northwest across an open farmed landscape which comprises large and unenclosed fields of arable crops and occasional grassland. This open and exposed landscape presents a strong horizontal emphasis, and this in turn accentuates the prominence of vertical features, such as the overhead electricity transmission line that cuts west to east, and the mature trees that provide shelter around the residential properties on Surfleet Bank and Marsh Drove and along the route of the A16. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

323. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

324. The susceptibility of residents is medium-high. While there is the potential that views from internal and external spaces associated with properties in this village have the potential to be affected by the OnSS for a long duration on a daily and yearly basis, their susceptibility is moderated by the separation distance from the site of the OnSS and the enclosure formed around many of the properties by built form and vegetation.

325. The susceptibility of walkers is medium-high. While there is no provision for pedestrians on this road and its use appears to be predominantly by road-users and not walkers, for walkers who do use this route, they will experience intermittent views through the vegetation towards the north where the OnSS will be located. While their views will be temporary and short in duration, they will have a heightened awareness of their surroundings.

326. The susceptibility of road-users is medium, with the susceptibility of road-users being moderated by the short-term and transitory nature of their views, the intermittent nature of their views towards the site of the OnSS owing to the screening effect of road side vegetation, and the separation distance and the oblique angle of views from the road towards the OnSS.

327. The combination of the medium value and the medium-high susceptibility of residents and walkers gives rise to a **medium-high** sensitivity. The combination of the medium value and the medium susceptibility of road-users gives rise to a **medium** sensitivity.

Magnitude of Change

328. The magnitude of change during the construction phase will be **medium-low**. The low part of the rating relates to a combination of the minimum separation of 2.0km between the OnSS construction and the visual receptors represented by this viewpoint and the extent of the construction site and compound which will be screened by intervening tree cover. The medium part of the rating relates to the presence of the construction cranes and emerging OnSS that will be visible in the gap between the trees and over the tops of the smaller trees. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the extent to which this landscape has been modified by the presence of the overhead electricity transmission line and the intensive agricultural practices.

329. The magnitude of change during the operational phase will be **medium-low**. The photomontages on Figure 28.22b and Figure 28.22d (document reference 6.2.28.22) show that the visible extents of the MDE will be limited by middle range tree cover, such that the OnSS will only be visible in the gaps between these trees. Furthermore, the views of residents, road-users and walkers will be partly screened by close range vegetation along Reservoir Road. While there will be potential for views to occur from the upper-floor interiors of the properties these will not be direct as they are orientated northwest and the OnSS will be located to the north.

330. At a minimum of approximately 2.0km, the OnSS will present a distant and partly screened feature that will not appear overly prominent in this view. While the broad horizontal extents will still be apparent, the vertical scale will be moderated through reference to the middle range mature trees, which will appear comparatively larger, and the closer range overhead electricity transmission line which will appear substantially larger. These scale comparisons will reduce the perceived scale of the OnSS and moderate its influence on this view.

331. The magnitude of change after an approximate 15-year period will reduce to medium-low to **low**. This takes into account the screening that the proposed mitigation planting will provide to the lower parts of the OnSS, albeit with the upper parts remaining visible, as shown in the photomontages on Figure 28.22c and Figure 28.22e (document reference 6.2.28.22).

Significance of Effect

332. The effect of the OnSS is considered to be of a medium-low magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on residents and walkers represented by this viewpoint will be **moderate** and the effect on road-users will be **moderate-minor** in level during both the construction and operational phases and **not significant** in EIA terms. The effect will be adverse, long term and reversible.

333. The medium-low magnitude of change will reduce to **low** during the approximate 15 year period during which mitigation planting will grow, and the effect will remain **not significant**, albeit reduced to a **moderate-minor** or **minor** level.

7.3.3.8 Viewpoint 7: Wragg Marsh, Marsh Road

Baseline

334. This viewpoint is located near to Wragg Marsh House on Marsh Road which extends north from the northern edge of Spalding to access the farmsteads in this area. The view is representative of road-users on Marsh Road, horse-riders and walkers on the bridleway between the River Welland and Common Road (B1357) and the small number of residents in this rural area. The viewpoint is located on the bridleway adjacent to Lord's Drain from where the Grade II Listed Wraggmarsh Farmhouse and Doocot can be seen to the north, albeit with the farmhouse enclosed by mature tree cover. Views from Marsh Road are mostly open with only very localised sections of hedgerow and tree cover forming enclosure.

335. This view from this viewpoint looks across a broad extent of open farmland, characterised by large fields of arable crops and limited enclosure from hedgerows or trees, although there is some enclosure around properties in the close-range and along field boundaries in the middle to distant ranges. The view towards the site of the OnSS is orientated northwest, where the range of the view is contained within the close range by the embankment of the River Welland, such that Surfleet Marsh is not visible. Overall, this is a view of a heavily modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

336. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

337. The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around many of the properties by mature trees and hedgerows which may restrict their views out.

338. The susceptibility of road-users is medium. There is the potential that views from Marsh Road have the potential to be affected by the OnSS, especially along the many open sections. The susceptibility of road-users is moderated by the short-term and transitory nature of their views and the baseline influence from the existing electricity transmission line.

339. The combination of the medium value and the medium-high susceptibility of residents gives rise to a **medium-high** sensitivity, while the combination of the medium value and the medium susceptibility of road-users gives rise to a **medium** sensitivity.

Magnitude of Change

340. The magnitude of change during the construction phase will be **negligible**. This rating relates principally to the screening effect of the River Welland embankment which means that the construction of the OnSS will not be visible from this location, with the exception of the construction of the very upper parts of the taller buildings and the presence and activity of the

cranes used in construction. These components of the construction process will be seen at a minimum of approximately 1.7km and to a very limited extent. Furthermore, they will be seen in a context in which overhead electricity transmission lines form an established feature of the baseline character and where views are characterised by farmland that is intensively managed. These existing influences moderate the effects of further human intervention in this landscape.

341. The magnitude of change during the operational phase will be **negligible**. The photomontages on Figure 28.23b and Figure 28.23d (document reference 6.2.28.23) show that only the very upper part of the taller buildings in the OnSS will be visible owing to the screening effect of the intervening River Welland embankment. The limited extent to which the OnSS will be visible will notably limit its influence on this view, along with the fact that the OnSS will occur in the more contained sector of the wider view where there are no special features to draw the attention of viewers.

342. Furthermore, the views of residents will typically be screened also by close range trees and other vegetation around their properties, while the views of road-users will be oblique towards the OnSS, thus reducing its prominence in their views. While for horse-riders on the bridleway, their higher elevation and orientation west towards the OnSS has the potential to increase the influence of the OnSS in their views, the magnitude of change will still be limited by the limited extent to which the OnSS will be visible.

343. The magnitude of change after an approximate 15-year period will remain **negligible**. While mitigation planting around the OnSS will establish and grow in this time, it will not be visible from this viewpoint owing to the screening effect of the River Welland embankment.

Significance of Effect

344. The effect of the OnSS is considered to be of a negligible magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on viewers represented by this viewpoint will be **minor** in level during both the construction and operational phases and **not significant** in EIA terms. The effect will be adverse, long term and reversible.

345. The significant effect will remain **not significant** effect at a **minor** level after an approximate 15-year period as mitigation planting will not be visible from this viewpoint or the wider area it represents.

7.3.3.9 Viewpoint 8: Cook's Road

Baseline

346. This viewpoint is located on Cook's Road, which extends east from Boston Road (B1397) at Bicker Haven, to access farmsteads and rural properties. The view is representative of residents in this rural area and road-users and walkers on this minor access road. Cook's Road extends passes through an area of arable farmland, where there are intermittent farmsteads and rural properties. The farmsteads comprise farm sheds, with the main farm along this road containing a complex of large farm sheds, glasshouses and a compound with a large fleet of distribution

vehicles.

347. This viewpoint is situated to the east of the glasshouses which line the southern side of the road and the semi-mature trees which line the northern side and presents an open view across large fields of arable crops. The view towards the site of the OnSS looks southeast across these fields, where there is very little enclosure other than the middle range trees surrounding the farmstead at the end of Cook's Lane and lining the route of the A16. The landscape is flat and low-lying, and there are no features to form a focus in this view, other than the overhead electricity transmission line that passes west to east. At a smaller scale, farmsteads and rural properties occur intermittently across the wider landscape. Overall, this is a view of a heavily modified farmed landscape, with a rural character that is influenced by the presence of the farm sheds, glasshouses and the overhead electricity transmission line.

Sensitivity

348. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

349. The susceptibility of residents is medium-high. While there is the potential that views from internal and external spaces associated with the small number of properties in this area have the potential to be affected by the OnSS, they are typically surrounded by tree cover and/or farm sheds that restrict views of the wider landscape. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the restricted nature of their views owing to the enclosure formed around a lot of the properties by other buildings and mature trees and hedgerows.

350. The susceptibility of walkers is medium-high. While there is no provision for pedestrians on this road and its use appears to be predominantly by road-users and not walkers, for walkers who do use this route, they will experience open views across farmland towards where the OnSS will be located. While their views will be temporary and short in duration, they will have a heightened awareness of their surroundings.

351. The susceptibility of road-users is medium. There is the potential that views from the eastern end of Cook's Road have the potential to be affected by the OnSS. The susceptibility of road-users is, however, moderated by the short-term and transitory nature of their views, and the extent of road-side enclosure along parts of this road owing to glasshouses and other buildings.

352. The combination of the medium value and the medium-high susceptibility of residents and walkers gives rise to a **medium-high** sensitivity and the combination of the medium value and the medium susceptibility of road-users gives rise to a **medium** sensitivity.

Magnitude of Change

353. The magnitude of change during the construction phase will be **medium-high**. This rating relates to a combination of the minimum separation of 1.3km between the OnSS construction and the visual receptors represented by this viewpoint, the extent of the construction site and

compound as seen within this local area, and the presence of the construction cranes and emerging OnSS in the relatively open aspect to the east of these visual receptors, albeit with middle range screening of the northern part of the OnSS construction from the stack of wooden pallets and woodland copse. The construction of the OnSS will appear at variance with the rural and small-scale character of this local landscape, despite the presence of the overhead electricity transmission lines and the extent to which this landscape has been modified by agricultural practices.

354. The magnitude of change during the operational phase will be **medium-high**. The photomontages on Figure 28.24b and Figure 28.24d (document reference 6.2.28.24) show the MDE with almost the full extents readily visible. The openness of this view towards the east, combined with the absence of intervening landform or vegetation other than the woodland copse, wooden pallets and lower strip of planting along the A16, means that the OnSS will be readily visible. Despite the separation distance of 1.3km, the OnSS will present a new and defining feature that will appear prominent in this view.

355. The magnitude of change is prevented from being rated high by the close-range influence from the overhead electricity transmission line which passes to the immediate south of the viewpoint, and the glasshouses which are located to the immediate west. Despite these features that establish development as part of the baseline view, the OnSS will form a new focus and defining feature owing to its horizontal extent and variance in character.

356. The magnitude of change after an approximate 5-to-15-year period will gradually reduce from medium-high to **medium-low**. This takes into account the screening that the proposed mitigation planting will provide on the western side of the OnSS. This will screen visibility of the lower parts of the OnSS, such that only the upper parts will be visible, as shown in the photomontages on Figure 28.24c and Figure 28.24e (document reference 6.2.28.24).

Significance of Effect

357. The effect of the OnSS is considered to be of a medium-high magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high for residents and walkers and medium for road-users. The effect of the OnSS on residents adn walkers represented by this viewpoint will be **major-moderate** and the effect on road-users will be **moderate** in level during both the construction and operational phases and **significant** in EIA terms. The effect will be adverse, long term and reversible.

358. The medium-high magnitude of change will gradually reduce to medium-low over the 15 year period during which mitigation planting will grow, and the effect will reduce to **not significant** at a **moderate** or **moderate-minor** level.

7.3.3.10 Viewpoint 9: Cunsdike Lane

Baseline

359. This viewpoint is located on Cunsdike Lane, which links Spalding Road southeast of Gosberton, to the west, and Gosberton Bank to the west of the A16, to the east. The viewpoint

is situated at the intersection with Fish Groom's Lane to the north and Sod's Lane to the south. It is representative of the views of the small number of residents in this rural area, and the small number of road-users and walkers on these rural roads.

360. This view looks northeast across an open farmed landscape towards the site of the OnSS. The landscape is flat and low-lying, and the view is characterised by the medium to large arable fields that have been reclaimed from marshland. There is limited enclosure in this landscape, albeit with tree cover typically occurring around dispersed farmsteads and rural properties, and along the A16 and field boundaries in the middle to distant ranges. Built development is evident in the form of an overhead electricity transmission line seen in the middle range crossing northwest to southeast, the closer range pole-mounted line routed along Cunsdike Lane, and the rural properties occurring intermittently across this landscape. Overall, this is a view of a modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

361. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

362. The susceptibility of road-users is medium. There is the potential that views from these rural roads have the potential to be affected by the OnSS, especially owing to the openness of the roadsides. The susceptibility of road-users is however moderated by the short-term and transitory nature of their views and to a lesser extent the baseline influence from the existing electricity transmission line and pole-mounted line.

363. The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the properties in this area have the potential to be affected by the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around many of the properties by mature trees and hedgerows which may restrict their views out.

364. The combination of the medium value and the medium-high susceptibility of residents gives rise to a medium-high sensitivity and the combination of the medium value, and the medium susceptibility of road-users gives rise to a medium sensitivity.

Magnitude of Change

365. The magnitude of change during the construction phase will be **medium-low**. This rating relates to the minimum separation of 1.9km between the OnSS construction and the visual receptors represented by this viewpoint, and the extent to which the construction will be screened by the intervening mature tree cover. While ground level construction works will be screened by closer and middle range trees and hedgerows, the emerging OnSS will be visible in the gaps between the trees and the construction cranes will be visible between and over the tops of smaller trees. The influence of these features on the view will, however, be moderated by the separation distance and the limited extents to which they will be visible.

366. The magnitude of change during the operational phase will be **medium-low**. The photomontages on Figure 28.25b and Figure 28.25d (document reference 6.2.28.25) show the MDE as a medium range and medium scale feature occupying a contained proportion of a wider view. There will be screening by intervening mature tree cover, such that only a small proportion of the overall OnSS will be visible. Furthermore, the favourable scale comparison presented by the intervening trees and overhead electricity transmission line to the north, will reduce the perceived scale of the emerging OnSS. While the OnSS will be visible from these rural roads and residential properties in the area, it will not redefine these views owing to its separation distance of 2.0km, the extent to which it will be screened by intervening tree cover and the relatively low level it will be seen to sit at in this view.

367. The magnitude of change after an approximate 15-year period will reduce from medium-low to **low**. As shown in the photomontages on Figure 28.25c and Figure 28.25e (document reference 6.2.28.25), the mitigation planting will help to consolidate the existing planting such that a more continuous screen will be formed. While the upper parts of the OnSS will remain visible, the combination of the existing and mitigation planting will help to integrate the OnSS into the landscape and in so doing further reduce its prominence.

Significance of Effect

368. The effect of the OnSS is considered to be of a medium-low magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on residents represented by this viewpoint will be **moderate** and the effect on road-users will be **moderate-minor** in level during both the construction and operational phases and **not significant** in EIA terms. The effect will be adverse, long term and reversible.

369. The medium-low magnitude of change will reduce to low during the approximate 15-year period during which mitigation planting will grow, and the effect will remain not significant, albeit reduced to a **moderate-minor** or **minor** level.

7.3.3.11 Viewpoint 10: Willow Farm, Sutterton Dowdyke

Baseline

370. This viewpoint is located in a rural area marked on the OS map as Sutterton Dowdyke which lies to the south of the A17 and the west of the A16. The viewpoint is situated on Waterbelly Lane, close to the intersection with Dowdyke Road and near to Willow Farm. It is representative of the views of residents of the farmsteads and rural properties, mostly dispersed and occasionally clustered, across this rural landscape. It is also representative of road-users and walkers on the rural roads and walkers on the footpath that connects Dowdyke Grange and Waterbelly Lane. Views from the roads are mostly open with only very localised sections where buildings, hedgerow or tree cover forms enclosure. Views from properties are typically enclosed by surrounding vegetation although there is the potential for views of the surrounding landscape to be experienced from internal and external spaces.

371. This view looks south across an open farmed landscape towards the site of the OnSS. The landscape is flat and low-lying, and the view is characterised by the mostly unenclosed, medium to large arable fields. There is some enclosure from hedgerows and tree cover, around properties and along field boundaries in the middle to distant ranges and along the corridor of the A16. Built development is evident in the form of rural farmsteads and properties, a pole-mounted line in the foreground and an overhead electricity transmission line in the middle ground. Overall, this is a view of a modified farmed landscape, albeit with a predominantly rural character.

Sensitivity

372. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

373. The susceptibility of residents is medium-high. There is some potential that views from internal and external spaces associated with the properties in this area have the potential to gain distant visibility of the OnSS. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed around many of the properties by mature trees and hedgerows which may restrict their views out.

374. The susceptibility of road-users is medium. There is the potential that views from rural roads have the potential to be affected by the OnSS, especially along the many open sections. The susceptibility of road-users is moderated by the short-term and transitory nature of their views and the baseline influence from the existing electricity transmission line.

375. The susceptibility of walkers is medium-high. While there is no provision for pedestrians on the roads and its use appears to be predominantly by road-users and not walkers, for walkers who do use these roads, they will experience open views across farmland towards where the OnSS will be located. They will also experience open views from the footpath linking Dowdyke Grange and Waterbelly Lane. While their views will be temporary and short in duration, they will have a heightened awareness of their surroundings.

376. The combination of the medium value and the medium-high susceptibility of residents and walkers gives rise to a **medium-high** sensitivity and the combination of the medium value, and the medium susceptibility of road-users gives rise to a **medium** sensitivity.

Magnitude of Change

377. The magnitude of change during the construction phase will be **low**. This rating relates to the minimum separation of 2.0km from the construction works and the visual receptors represented by this viewpoint, whereby the construction works will be seen as a relatively medium range and medium scale feature occupying a small proportion of a much wider view. While ground level construction works will be screened by middle ground trees, taller features, such as the construction cranes and emerging building will be more readily visible. The influence of these features on the view will, however, be moderated by the separation distance, the

partial screening by intervening tree cover and baseline influences from the overhead electricity transmission line in the same sector and at a similar range.

378. The magnitude of change during the operational phase will be **low**. The photomontages on Figure 28.26b and Figure 28.26d (document reference 6.2.28.26) shows the MDE as a relatively medium range and medium scale feature occupying a small proportion of a much wider view. There will be some screening by middle range trees, and the height of the OnSS building and outdoor electrical infrastructure will appear largely commensurate with the height of these trees. While the OnSS will be apparent from this section of the road and residential properties in the area, it will not redefine these views owing to its separation distance and the baseline influence from the overhead electricity transmission line seen in the same sector and at a similar range. The effect is also moderated by the heavily modified state of the agricultural landscape and the lack of natural features.

379. The magnitude of change after an approximate 15-year period will remain **low**. As shown in the photomontages on Figure 28.26c and Figure 28.26e (document reference 6.2.28.26), the mitigation planting will add to the screening effect formed by the existing mature tree cover, such that the OnSS will be partly screened, with the upper parts remaining visible. It will merge visually with the existing planting in the wider context to create an integrated appearance. While the OnSS will still have a presence and influence in this view, the limited extent to which it will be visible will ensure it does not form the defining feature.

Significance of Effect

380. The effect of the OnSS is considered to be of a low magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on residents and walkers represented by this viewpoint will be **moderate-minor** and the effect on road-users will be **minor** in level during both the construction and operational phases and **not significant** in EIA terms. The effect will be adverse, long term and reversible.

381. The **moderate-minor** or **minor** and **not significant** effect will remain after an approximate 15-year period during which mitigation planting will grow and add some further screening to the OnSS.

7.3.3.12 Viewpoint 11: Gosberton

Baseline

382. This viewpoint is located on Boston Road in Gosberton, adjacent to the new residential development on Queen Elizabeth Road. Residential development extends along the western side of Boston Road, comprising detached single and two storey properties, and a mix of old and new. Farmland extends along the eastern side of Boston Road, comprising large and mostly unenclosed fields of arable crops. The residential properties are orientated towards this eastern sector, such that most residents will experience an open aspect apart from where garden vegetation or farmland trees create some degree of enclosure. The view is, therefore,

representative of the views of residents but also of the views of walkers on the pavements and road-users on Boston Road. Views from the pavement and roads are mostly open between Highbridge Lane to the south and Lowbridge Lane to the north, albeit with the open eastern aspect oblique to the direction of travel.

383. This view looks east across an open farmed landscape towards the site of the OnSS. The landscape is flat and low-lying, and the view is characterised by the unenclosed, medium to large arable fields. There is some enclosure from hedgerows and tree cover, around properties and along field boundaries in the middle to distant ranges and along the corridor of the A16. Built development is evident in the form of the residential properties that line the western side of the road, street lamps in the foreground and an overhead electricity transmission line in the distance. Overall, this is a view of a modified farmed landscape, albeit with a predominantly rural character and seen from an urban context.

Sensitivity

384. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

385. The susceptibility of residents is medium-high. There is some potential that views from internal and external spaces associated with the properties in this area have the potential to gain distant visibility of the OnSS, especially as the properties are orientated towards the eastern sector where the OnSS will be located. The high part of the susceptibility rating relates to the duration of their views potentially each day and also over the years, and the medium part relates to the enclosure formed by trees within the close, middle and distant range that will restrict views.

386. The susceptibility of walkers is medium-high. There is a footpath on the western side of the road and this allows pedestrians walking along Boston Road to experience open views across the adjacent farmland to the site of the OnSS. Although the views of walkers will be of a relatively short duration, they will typically have a heightened awareness of their surroundings that raises their susceptibility.

387. The susceptibility of road-users is medium. There is the potential that views from Boston Road have the potential to be affected by the OnSS, especially along the many open sections. The susceptibility of road-users is moderated by the short-term and transitory nature of their views and the baseline influence from the urban context that the road passes through.

388. The combination of the medium value and the medium-high susceptibility of residents and walkers gives rise to a **medium-high** sensitivity and the combination of the medium value, and the medium susceptibility of road-users gives rise to a **medium** sensitivity.

Magnitude of Change

389. The magnitude of change during the construction phase will be **low**. This rating relates to the minimum separation of 2.0km from the construction works and the visual receptors represented by this viewpoint, whereby the construction works will be seen as a relatively

medium range and medium scale feature occupying a small proportion of a much wider view. While ground level construction works will be screened by middle ground trees, taller features, such as the construction cranes and emerging building will be more readily visible. The influence of these features on the view will, however, be moderated by the separation distance, the partial screening by intervening tree cover and baseline influences from the overhead electricity transmission line in the same sector and at a similar range.

390. The magnitude of change during the operational phase will be **low**. The photomontages on Figure 28.27b and Figure 28.27d (document reference 6.2.28.27) shows the MDE as a relatively medium range and medium scale feature occupying a small proportion of a much wider view. There will be some screening by middle range trees, and the height of the OnSS building and outdoor electrical infrastructure will appear largely commensurate with the height of these trees. While the OnSS will be apparent from this section of the road and the few residential properties in the area, it will not redefine these views owing to its separation distance and the baseline influence from the overhead electricity transmission line seen in the same sector and at a similar range. The effect is also moderated by the heavily modified state of the agricultural landscape and the lack of natural features.

391. The magnitude of change after an approximate 15-year period will remain **low**. As shown in the photomontages on Figure 28.27c and Figure 28.27e (document reference 6.2.28.27), the mitigation planting will add to the screening effect formed by the existing mature tree cover, such that the OnSS will be partly screened, with the upper parts remaining visible. It will merge visually with the existing planting in the wider context to create an integrated appearance. While the OnSS will still have a presence and influence in this view, the limited extent to which it will be visible will ensure it does not form the defining feature.

Significance of Effect

392. The effect of the OnSS is considered to be of a low magnitude during both the construction and operational phase, and the sensitivity of receptors affected is considered to be medium-high or medium. The effect of the OnSS on residents and walkers represented by this viewpoint will be **moderate-minor** and the effect on road-users will be **minor** in level during both the construction and operational phases and **not significant** in EIA terms. The effect will be adverse, long term and reversible.

393. The **moderate-minor** or **minor** and **not significant** effect will remain after an approximate 15-year period during which mitigation planting will grow and add some further screening to the OnSS.

7.4 Summary of Visual Effects

394. The OnSS is the component of the onshore infrastructure with greatest potential to give rise to significant visual effects, owing to its large-scale and modern appearance which will be at variance with the predominantly rural character of the receiving landscape. Eleven viewpoints have been selected to represent the views of residents, road-users, walkers and horse-riders in

the local area.

395. The assessment has found that the effect of the OnSS on the six closest viewpoints within 1.3km will be significant during the construction and operational phases. This assessment relates to the scale and appearance of the OnSS, as well as the relatively open and exposed nature of the flat and low-lying farmed landscapes where the OnSS will be located. The effect on the five viewpoints that lie beyond 1.3km will be not significant owing principally to the accumulation of small-scale rural features, such as trees, hedgerows, farmsteads and embankments which reduce the extent and level of visibility beyond these close-ranges.

396. Embedded mitigation forms part of the Project and extensive mitigation planting is proposed for the local landscape surrounding the OnSS. Mitigation planting has been designed to create an effective screen around the OnSS and will remove all significant effects on surrounding visual receptors within the first 15 years of operation.

397. In respect of the construction of the landfall, onshore ECC and 400kV cable corridor, the occurrence of significant effects on visual receptors will occur in localised areas typically where TCCs occur. The effects will occur where road-users pass adjacent to or between TCCs or where residents will experience relatively close-range views of TCCs. The careful siting of the onshore ECC and 400kV cable corridor combined with the location of almost all open-cut trenching in arable farmland and the extensive use of trenchless technique at approximately 211 locations has greatly reduced the potential for significant effects on visual receptors to arise along the length of the onshore ECC and 400kV cable corridor.

8 Decommissioning

398. This section describes the potential impacts of the decommissioning of the onshore elements of the Project with regard to impacts on landscape and visual receptors.

399. No decision has been made regarding the final decommissioning policy for the onshore cables, as it is recognised that industry best practice, rules and legislation change over time. It is anticipated that the cables and ducts associated with the onshore ECC and 400kV cable corridor would be removed. The effects of decommissioning should the cables be removed, however, would be no worse than the effects of construction for the onshore ECC and 400kV cable corridor.

400. In relation to the OnSS, the programme for decommissioning is expected to be similar in duration to the construction phase. The detailed activities and methodology would be determined later within the project lifetime, but are expected to include:

- Dismantling and removal from site of outside electrical equipment located within the OnSS compound and removal of cabling from site;
- Dismantling and removal of electrical equipment from within the OnSS buildings and removal of OnSS buildings;
- Removal of areas of hard standing; and
- Reinstatement of the OnSS footprint and platform areas to agricultural land-uses and hedgerows.

401. Whilst details regarding the decommissioning of the OnSS are currently unknown, considering the worst-case assumption (which would be the removal and reinstatement of the current land use at the OnSS site) it is anticipated that the impacts would be similar to or less than those assessed during construction. The difference at the decommissioning phase would be that mitigation planting would have matured over the operational life of the onshore elements of the Project and would therefore screen the decommissioning works from many of the surrounding landscape and visual receptors.

402. The decommissioning methodology would need to be finalised nearer to the end of the lifetime of the onshore elements of the Project so as to reflect current guidance, need, policy and legislative context at that point. The DCO requires an onshore decommissioning plan to be submitted to and approved by the relevant planning authority (in consultation with the relevant highway authority and the relevant statutory nature conservation body).

9 Cumulative Impact Assessment

9.1 Introduction

403. This cumulative impact assessment for LVIA has been undertaken in accordance with the methodology provided in Chapter 5 (document reference 6.1.5).

404. As described in section 4, a comprehensive list of projects that have the potential to contribute to cumulative impacts of the OnSS, onshore ECC, 400kV cable corridor and landfall has been compiled and this list and the approach to compiling this list is described in Chapter 5 (document reference 6.1.5). The LVIA has undertaken a process of scoping out projects and activities from this list, based on professional judgement, assessment rationale and guidance relevant to the assessment of landscape and visual impacts.

405. Cumulative developments are shown on Figure 28.13 (document reference 6.2.28.13). This shows that no cumulative developments fall within the 1km study area for the landfall. There is, therefore, no potential for cumulative effects to arise in respect of this onshore component of the Project and the assessment of these effects has been scoped out of the LVIA.

406. Figure 28.13 (document reference 6.2.28.13) shows that there are a number of cumulative developments that lie within the 1km study area of the onshore ECC and 400kV cable corridor. A preliminary assessment has been carried out in order to highlight those cumulative developments that have potential to interact with the onshore ECC and 400kV cable corridor and give rise to significant cumulative effects.

407. The results of this preliminary assessment are presented in Table 9.1..

Table 9.1: Onshore ECC / 400kV Cable Corridor- Preliminary Assessment of Cumulative Developments

No.	Development name / type	Project	Distance / Direction	Scoping in / Scoping out of LVIA
1	West End, Hogsthorpe Residential Development (N/084/01712/89)	Reserved matters application for the erection of up to 89 dwellings and associated works	190m southeast of onshore ECC	Scope in owing to potential close proximity of cumulative development to onshore ECC.
2	Lower Farm Solar Farm (S/195/02340/20)	Application for 49.9MW solar farm	896m east of onshore ECC	Scope out owing to separation distance between the cumulative development and onshore ECC.
3	Watery Lane, Butterwick	Consent for the erection of 42 dwellings	1.1km east of onshore ECC	Scope out owing to separation distance between cumulative

No.	Development name / type	Project	Distance / Direction	Scoping in / Scoping out of LVIA
	Residential Development (B/21/0196)			development and onshore ECC and baseline influences from existing development in the settlement
4	Church End Lane, Fishtoft Residential Development (B/20/0489)	Consent for the erection of 20 affordable dwellings and associated works	800m west of onshore ECC	Scope out owing to separation distance between cumulative development and onshore ECC and baseline influences from existing development in the settlement
5	Church End Lane, Fishtoft Residential Development (B/20/0488)	Outline application for the erection of 46 residential dwellings and associated works	800m west of onshore ECC	Scope out owing to separation distance between cumulative development and onshore ECC and baseline influences from existing development in the settlement
6	Land off Puttock Gate, Fosdyke. Residential Development (B/21/0419)	Outline application for the erection of 9 dwellings	220m north of onshore ECC	Scope in owing to potential close proximity of cumulative development to onshore ECC
7	National Grid Substation at Weston Marsh	Pre-application stage development	0m south of 400kV cable corridor	Scope in owing to close proximity of cumulative development to 400kV cable corridor
8	Naylor's Farm Plant based protein extraction facility and anaerobic digestor plant (H17-1097-23)	Application stage development	440m west of onshore ECC and 400kV cable corridor	Scope out owing to separation distance from onshore ECC and 400kV cable corridor

408. In respect of the OnSS, Figure 28.13 (document reference 6.2.28.13) shows that three cumulative developments fall within the 5km study area of the OnSS, one small scale residential development and two large scale developments.

409. In respect of the small-scale residential development, this is located at Fosdyke Bridge, approximately 3.7km to the northeast of the OnSS. Despite this application stage residential

development being located within the 5km study area, there is no potential for a significant cumulative effect to arise owing to the notable separation distance from the OnSS, the very limited potential for inter-visibility of the two developments and the very limited visibility of the residential development which limits its influence on the cumulative situation. This takes into account the fact that it is a relatively small residential development, comprising eleven dwellings, and that they are located in an existing settlement where there is already an urban influence. Furthermore, there is the built form of the village, tree cover and hedgerows in the intervening area between this proposed residential development and the OnSS such that the occurrence of inter-visibility will be very limited. This development has been scoped out of the cumulative assessment owing to there being no potential for significant cumulative effects to arise.

The NGSS is a large-scale energy development located at Weston Marsh. Pre-application stage projects are generally not considered in the assessment of cumulative effects because firm information on which to base the assessment is not available. Despite the limited availability of information, the NGSS is included in this cumulative assessment owing to its close proximity, its large scale, and the likelihood it will give rise to significant cumulative effects.

410. While a detailed cumulative assessment of the OnSS and NGSS is not possible owing to the lack of detailed information available on the NGSS, a high level cumulative assessment is included in this LVIA in order to highlight those landscape and visual receptors with potential to be affected and to ascertain the major, moderate or minor effects, and significant or not significant levels of those effects. In order to identify which landscape and visual receptors have the potential to undergo significant cumulative effects, a preliminary assessment has been carried out with reference to the cumulative ZTV which shows the combined visibility of the OnSS and NGSS on Figure 28.14 (document reference 6.2.28.14).

411. The other large-scale development considered in the cumulative assessment is the application stage Plant Based Protein Extraction Facility and Anaerobic Digestion Plant (hereafter referred to as the ADP) located on the land north and east of Surfleet Bank and to the west of Woad Farm. Site plans and elevations form part of the application documents and have been used to inform the cumulative assessment. While the ADP is not included in the visualisations, consideration has been given to the potential cumulative effects and these are covered in the preliminary assessment below and in the detailed assessment in this section.

412. The results of this preliminary assessment are presented in Table 9.2: OnSS - Preliminary Assessment of Cumulative Effects. The landscape and visual receptors in the blue rows have potential to undergo significant cumulative effects and have therefore been carried through into the detailed assessment.

Table 9.2: OnSS - Preliminary Assessment of Cumulative Effects

Receptor	Preliminary Assessment
Surfleet and Gosberton Marsh LLCA	There is the potential for a significant cumulative effect to arise owing to the cumulative interaction between the OnSS and the ADP in this LLCA and the NGSS in the Weston Marsh LLCA to the immediate east.
Weston Marsh LLCA	There is the potential for a significant cumulative effect to arise owing to the cumulative interaction between the NGSS in this LLCA and the OnSS in the Surfleet and Gosberton Marsh LLCA to the immediate west. The ADP will not be readily visible from this LLCA.
VP1 Marsh Lane near Manor House	In respect of the NGSS, there is no potential for a significant cumulative effect to arise owing to the very limited visibility of the NGSS, despite the OnSS being within close proximity and readily visible. The NGSS will be located a minimum of approximately 3.0km from the viewpoint and will be largely screened by the River Welland embankment and intervening tree cover. There is the potential for a significant cumulative effect to arise owing to inter-visibility between the OnSS and the ADP which will both be visible in relatively close range to the southwest.
VP2 A16 near Marsh Lane junction	In respect of the NGSS, there is no potential for a significant cumulative effect to arise owing to the very limited visibility of the NGSS, despite the OnSS being within close proximity and readily visible. The NGSS will be located a minimum of approximately 3.6km from the viewpoint and will be largely screened by the River Welland embankment and intervening tree cover. There is the potential for a significant cumulative effect to arise owing to inter-visibility between the OnSS and the ADP which will both be visible in relatively close range to the south.
VP3 A16 near Gosberton Bank junction	In respect of the NGSS, there is no potential for a significant cumulative effect to arise owing to the very limited visibility of the NGSS, despite the OnSS being within close proximity and readily visible. The NGSS will be located a minimum of approximately 2.7km from the viewpoint and will be largely screened by the River Welland embankment and intervening tree cover. There is no potential for a significant cumulative effect to arise owing to the screening of the OnSS by the ADP which will be located to the fore and in close proximity to the viewpoint.
VP4 Macmillan Way near Ship Inn	In respect of the NGSS, there is the potential for a significant cumulative effect to arise owing to the cumulative interaction between the OnSS seen to the northwest and the NGSS seen to the southeast of the River Welland, both readily visible and both seen in relative proximity. There is also the potential for a significant cumulative effect to arise owing to inter-visibility between the OnSS and the ADP which will both be visible in relatively close range to the northwest and west.

Receptor	Preliminary Assessment
VP5 Macmillan Way near Welland House Farm	In respect of the NGSS, there is the potential for a significant cumulative effect to arise owing to the cumulative interaction between the OnSS seen to the west and the NGSS seen to the southeast of the River Welland, both readily visible and both seen in relative proximity. There is also the potential for a significant cumulative effect to arise owing to inter-visibility between the OnSS and the ADP which will both be visible in relatively close range to the west.
VP6 Reservoir Road, Surfleet Seas End	In resepct of the NGSS, there is no potential for a significant cumulative effect to arise owing to the very limited visibility of the OnSS and of the NGSS. The NGSS will be located a minimum of approximately 1.7km from the viewpoint and will be largely screened by intervening buildings, tree cover and the River Welland embankment. There is the potential for a significant cumulative effect to arise owing to inter-visibility between the OnSS and the ADP which will both be visible in relatively close range to the northwest.
VP7 Wragg Marsh, Marsh Road	In respect of the NGSS, there is no potential for a significant cumulative effect to arise owing to the very limited visibility of the OnSS, despite the NGSS being within close proximity and readily visible. The OnSS will be located a minimum of approximately 1.4km from the viewpoint and will be largely screened by the River Welland embankment. There is no visibility of the ADP from this location.
VP8 Cook's Road, Gosberton Marsh	There is no potential for a significant cumulative effect to arise owing to the limited visibility of the OnSS, NGSS and ADP. The NGSS and ADP will be located a minimum of approximately 4.4km and 1.7km respectively from the viewpoint and will be largely screened by intervening tree cover.
VP9 Cunsdike Lane, Gosberton Marsh	There is no potential for a significant cumulative effect to arise owing to the limited visibility of the OnSS, NGSS and ADP. The NGSS and ADP will be located a minimum of approximately 3.9km and 1.5km respectively from the viewpoint and will be largely screened by intervening tree cover.
VP10 Willow Farm, Sutterton Dowdyke	There is no potential for a significant cumulative effect to arise owing to the very limited visibility of the OnSS and of the NGSS. The NGSS will be located a minimum of approximately 5.3km from the viewpoint and will be largely screened by intervening tree cover. While there will be some visibility of the ADP, the location a minimum of 3.0km from the viewpoint combined with the partial screening will prevent a significant cumulative effect from arising.
VP11 Gosberton	There is no potential for a significant cumulative effect to arise owing to the very limited visibility of the OnSS, NGSS and ADP. The NGSS and ADP will be located a minimum of approximately 3.9km and 2.9km respectively from the viewpoint and will be largely screened by intervening tree cover.

The landscape and visual receptors in the blue rows have potential to undergo significant cumulative effects and have therefore been carried through into the detailed assessment.

413. The preliminary assessment reveals that two LLCAs and five viewpoints have the potential to be significantly affected. The cumulative MDE for the construction and operational phases of the Project is as set out for the main assessment in Table 5.1.

9.2 Cumulative Assessment – Onshore ECC / 400kV cable corridor

9.2.1 Visual Receptors

414. There is the potential for a significant cumulative effect to arise as a result of the onshore ECC and 400kV cable corridor in conjunction with the following proposed developments;

- West End, Hogsthorpe;
- Land off Puttock Gate, Fosdyke; and
- NGSS at Weston Marsh.

415. There will be no cumulative effect on landscape character owing to the relatively small scale of the onshore ECC and 400kV cable corridor construction, the intensively farmed nature of the land that the majority of the onshore ECC and 400kV cable corridor is routed through and the broad expanse of the LCTs. These factors ensure that the onshore ECC and 400kV cable corridor will occupy only a small proportion and will have a limited influence on the overall character.

416. There is the potential that the onshore ECC in conjunction with the residential developments listed above, may give rise to significant cumulative effects on the views of visual receptors, such as nearby residents, walkers, horse-riders or road-users. There is also the potential that the 400kV cable corridor in conjunction with NGSS may give rise to significant cumulative effects on visual receptors on the southern side of the Welland River.

417. The potential for cumulative visual effects to arise in respect of the onshore ECC and 400kV cable corridor are limited by the factors set in the introduction to section 7.3 and will only have potential to arise during construction in instances where the onshore ECC and 400kV cable corridor are located close to visual receptors, such as residents, road-users and walkers, as well as close to the cumulative developments, and /or where tree or hedgerow losses are notable.

418. The assessment considers the onshore ECC and 400kV cable corridor in terms of an 80m working width during the construction phase. The effects of the onshore ECC and 400kV cable corridor during the operational phase will be limited to the residual effects relating to tree or hedgerow loss. Replacement of trees over the onshore ECC and 400kV cable corridor will not be possible and re-establishment of hedgerows will take approximately 3 to 5 years to infill gaps.

9.2.2 West End, Hogsthorpe

9.2.2.1 Baseline

419. Hogsthorpe is a village to the west of the coastal town of Chapel St Leonard and with the A52 passing through. The historic core is situated on High Street with more modern

development extending along Thames Street to the north and infilling in the area to the east of this, to present a fairly consolidated settlement pattern. The High Street extends west from the village centre and linear development extends along this road out into the rural surroundings.

420. The cumulative development is an application for 89 dwellings, located to the west of Thames Street and to the north of West End, which is the continuation of the High Street. The development will essentially infill this open field on the western side of the village. To the east lies the rears of the properties and school on Thames Street, to the south lies more intermittent residential properties along West End (A52), to the west lies an industrial building and yard and then farm fields before Bracken Lane, and to the north there are farm fields.

9.2.2.2 Sensitivity

421. The value of the view is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

422. The susceptibility of residents is medium-high. While there is the potential that views from internal and external spaces associated with properties on West End of Bracken Lane have the potential to be affected by the onshore ECC and the residential development, for a long duration on a daily and yearly basis, their susceptibility is moderated by the separation distance from either the onshore ECC or the residential development and the enclosure formed around many of the properties by built form and vegetation.

423. The susceptibility of road-users is medium, with the susceptibility of road-users being moderated by the short-term and transitory nature of their views. While the road passes close to the residential development, trenchless technique is used across an extent of approximately 35m to the north and 200m to the south of the A52 such that the influence from the onshore ECC will be limited. There will be an influence from the roadside TCC further to the west but which is 360m on from the residential development and therefore not closely associated.

424. The combination of the medium value and the medium-high susceptibility of residents gives rise to a **medium-high** sensitivity. The combination of the medium value and the medium susceptibility of road-users gives rise to a **medium** sensitivity.

9.2.2.3 Cumulative Magnitude of Change

425. The residential development will comprise the construction of 89 properties situated along the northern side of the A52 and to the west of Thames Street. The onshore ECC will comprise trenchless technique to the west of Bracken Lane but also a TCC set to the north of the A52 to the west of the onshore ECC.

426. The cumulative magnitude of change on residents will be **medium-low**. There are few properties on the A52 or Bracken Lane from which views of both the residential development and the TCC of the onshore ECC will be experienced. Views from most of the properties are partially screened by hedgerows or tree cover or occasionally other buildings. In the few instances where both the residential development and the onshore ECC will be visible from internal or external spaces, the TCC of the onshore ECC will form a relatively distant and small scale influence, that will limit the cumulative magnitude of change to medium-low.

427. The cumulative magnitude of change on road-users will be **low**. While road-users will experience a close range view of the residential development from the A52 and a close range view of the TCC of the onshore ECC, these two developments will be separated by an approximate stretch of 360m with very limited intervisibility. The effect will therefore be sequential and will be moderated by the extent of other developments along this section of the A52 including residential developments, small scale industrial developments and the broad extent of intensively farmed fields.

9.2.2.4 Cumulative Significance of Effect

The cumulative effect will be **not significant** at a **moderate** level for residents and at a **minor** level for road-users. The effect will be adverse, short term and reversible.

9.2.3 Land off Puttock Gate, Fosdyke

9.2.3.1 Baseline

428. Fosdyke is a village on the northern side of the River Welland and eastern side of the A17, situated close to the northeast of where these two corridors intersect. The historic core is situated on Old Main Street with more modern development extending along Bell Lane to the northeast and Puttock Gate to the southwest, to present a settlement pattern that extends into and integrates with the surrounding rural landscape.

429. The cumulative development is an application for 11 dwellings, located on the northern side of Puttock Gate, and to the north of the sports field, social club and Fosdyke House. To the west of the development site, there is a strip of recent residential development fronting onto Puttock Gate and a mix of post-war bungalows and semi-detached houses on the southern side of the road.

9.2.3.2 Sensitivity

430. The value of the views is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

431. The susceptibility of recreational users of the bowling green, football pitch and play park is medium-high. Recreational users will be in the open and with potential to experience views of the onshore ECC construction to the south and the residential development construction to the north. While their views will be temporary and short to medium in duration, they will have a heightened awareness of their surroundings.

432. The susceptibility of residents is medium-high. While there is the potential that views from internal and external spaces associated with properties on Puttock Gate and Snaith Avenue have the potential to be affected by the onshore ECC and the residential development for a long duration on a daily and yearly basis, their susceptibility is moderated by the separation distance from the onshore ECC, and the enclosure formed around many of the properties by built form and vegetation.

433. The susceptibility of road-users is medium, with the susceptibility of road-users being moderated by the short-term and transitory nature of their views. While the road passes close

to the residential development, it is approximately 270m from the onshore ECC such that the influence from these construction works will be limited. These views will also be restricted by the screening effect of roadside vegetation and the oblique angle of views from the road towards the onshore ECC.

434. The combination of the medium value and the medium-high susceptibility of residents and recreational users gives rise to a **medium-high** sensitivity. The combination of the medium value and the medium susceptibility of road-users gives rise to a **medium** sensitivity.

9.2.3.3 Cumulative Magnitude of Change

435. The residential development will comprise the construction of eleven properties situated along the northern side of Puttock Gate. The onshore ECC will comprise the construction of an access road to the southeast of the bowling green and a mix of open cut trenching and trenchless techniques with associated TCC to the south of the bowling green and football pitch.

436. The cumulative magnitude of change on recreational users will be **medium-low**. At the northern end of the football pitch and by the social club, the construction of the residential development will have a close-range influence on these receptors, but the onshore ECC will have a limited influence owing to the separation distance of approximately 300m to the south. At the bowling green to the south of the football pitch there will be a limited influence from the residential development owing to its location approximately 150m to the north and the screening effect of the intervening tree cover, while the onshore ECC will be located approximately 110m to the south. Neither of these developments will have an especially close-range influence and owing to their relatively small scale and extents the cumulative magnitude of change will not be greater than medium-low.

437. The cumulative magnitude of change on residents will be **medium-low**. There are few properties on Puttock Gate or Snaith Avenue from which views of both the residential development and the onshore ECC will be experienced. Views from most of the properties are screened by other surrounding buildings, or in the case of Fosdyke House, screened by surrounding mature tree cover. In the few instances where both the residential development and the onshore ECC will be visible from internal or external spaces, these will form relatively distant and small-scale influences, that will limit the cumulative magnitude of change to medium-low.

438. The cumulative magnitude of change on road-users will be **low**. While road-users will experience a close-range view of the residential development on Puttock Gate, the construction of the onshore ECC will be located approximately 300m to the south and owing to their relatively small scale combined with the screening effect of the intervening trees and baseline influence from farm machinery in this agricultural landscape, the effect will be limited.

9.2.3.4 Cumulative Significance of Effect

439. The cumulative effect will be **not significant** at a **moderate** level for recreational users and residents and at a **moderate- minor** level for road-users. The effect will be adverse, short term and reversible.

9.2.4 NGSS Weston Marsh

9.2.4.1 Baseline

440. Weston Marsh LLCA lies to southeast the River Welland and Macmillan Way and to the west of the B1357 and A17 and is characterised by low-lying and level landform and large fields of predominantly arable crops with limited presence of hedgerows and tree cover to create an open and exposed character. Settlement in Weston Marsh comprises farmsteads, which although dispersed across the landscape, present concentrations of large farm sheds. Other rural properties occur either in isolated locations or small clusters and although they are mostly enclosed by garden vegetation, some experience an open aspect.

441. The cumulative development that occurs in this area is the NGSS which will be located within the Connection Area. As the 400kV cable corridor will connect the OnSS with the NGSS, a cumulative effect may arise in respect of the effect of both these developments on visual receptors in the local area. The closest properties are 1 and 2 School Cottage which lie 130m southwest of the TCC on Marsh Road and 1.4km northwest of the NGSS and the closest road is Marsh Road which passes adjacent to the TCC and comes within 450m of the NGSS to the south of Crowtree Farm. This assessment considers the cumulative effects on the residents at the School Cottages which have an open aspect to the southeast and road-users on Marsh Road from where open views will occur along most of its length. Views from the other close properties; namely Wraggmarsh Farm and Crowtree Farm, are largely enclosed by tree cover and therefore will not be susceptible to significant cumulative effects.

9.2.4.2 Sensitivity

442. The value of the views is medium. There are no formal viewpoints or landscape planning designations in this area which would otherwise denote a special visual amenity value.

443. The susceptibility of residents is medium-high. There is the potential that views from internal and external spaces associated with the School Cottages have the potential to be affected by the 400kV cable corridor and although the TCC will be located to the northeast and therefore not directly visible from the main southeast façade, the TCC will be visible from side windows and garden grounds, and the 400kV cable corridor and NGSS will be visible from the main façade. The views of residents will be cumulatively affected for the 42 month construction phase on a daily basis, although their susceptibility is moderated by the separation distance from the 400kV cable corridor and NGSS.

444. The susceptibility of road-users is medium, with the susceptibility of road-users being moderated by the short-term and transitory nature of their views. Marsh Road passes adjacent to the TCC located between Wraggmarsh Farm and Crowtree Farm and the open-cut trenching to the southeast will also be visible. While open views of the NGSS will be experienced by road-users from most of this road, it is only the section between Wraggmarsh Farm and Crowtree Farm that is considered, as this will be where both developments will be visible from.

445. The combination of the medium value and the medium-high susceptibility of residents gives rise to a **medium-high** sensitivity. The combination of the medium value and the medium

susceptibility of road-users gives rise to a **medium** sensitivity.

9.2.4.3 Cumulative Magnitude of Change

446. The 400kV cable corridor will comprise a TCC on Marsh Road, an access road from Marsh Road adjacent to the School Cottages and a mix of open cut trenching and trenchless techniques to connect into the NGSS. For the purposes of this assessment, it is assumed that the NGSS will comprise a footprint of 800m x 200m and a maximum height of 16m and will be located in the Connection Area to the east of Marsh Road.

447. The cumulative magnitude of change on residents will be **medium**. The construction of the NGSS will be substantially larger than the construction of the 400kV cable corridor and it will be the NGSS that will have the more notable influence on the views of residents at the School Cottages. In comparison, the presence of the TCC, access road and mix of open cut trenching and trenchless techniques will have lesser influence owing to their smaller size, more compact extents and absence of large structures. There will, nonetheless, be a cumulative effect owing to the fact that the 400kV cable corridor will extend the influence of construction into the east and northeast parts of the view and will also bring construction closer to these properties, especially with the access road extending over the foreground part of their view.

448. The cumulative magnitude of change on road-users will be **medium**. Again, the construction of the NGSS will have a more notable influence on the views of road-users compared to the influence of the construction of the 400kV cable corridor. Road-users will, however, pass adjacent to the TCC and this will create a cumulative effect by extending the influence of construction to the northern end of this road.

9.2.4.4 Cumulative Significance of Effect

449. The cumulative effect will be **significant** at a **major-moderate** level for residents and at a **moderate** level for road-users. The effect will be adverse, short term and reversible.

9.3 Cumulative Assessment – OnSS

9.3.1 Introduction

450. There is the potential for a significant cumulative effect to arise as a result of the OnSS in conjunction with the NGSS. For the purpose of this assessment, it is assumed that the NGSS will be located within the area defined as the Connection Area in Weston Marsh, as shown on Figure 28.14 (document reference 6.2.28.14). A Maximum Design Envelope approach has been adopted for the NGSS, using assumptions derived from Industry Standards and broadly typical arrangements for substations of this nature. The location, ground level and dimensions for the NGSS are currently not known and therefore assumptions have been made for the purposes of this cumulative assessment. The assumed dimensions of the NGSS are 800m x 200m with a maximum height of 16m and the NGSS has been located centrally within the Connection Area, taking into account the alignment of the existing overhead cables.

451. The ADP is at application stage and as such there are plans and elevational illustrations

available. The ADP is proposed on the land to the east of Surfleet Bank, close to where it joins with the A16. The dimensions of the site are shown on the plans to be 177m x 233m. The site is essentially divided into a north and a south, with the northern part comprising storage warehouse, factory and research facility and the southern part comprising digestate processing and waste transfer units, digestor tanks and storage tanks. The elevational illustrations show that the digestate processing unit is the largest building on site with a height of approximately 18m, with the waste transfer unit at approximately 16m and the digestor tanks at approximately 15m.

452. The visualisations on Figures 28.20 and 28.21 (document reference 6.2.28.20 and 6.2.28.21) show the extent of the Connection Area (this is an indicative study area for the NGSS) in a dashed blue line and an indicative dark grey box located centrally in the site, acting as a Rochdale Envelope.

453. This assessment considers the effects of mitigation planting associated with the OnSS which will form an effective screen within 15 years and, in so doing, will reduce the cumulative effect. The NGSS may also include mitigation planting which will further reduce the cumulative effect although at the time of writing such information has not been available and therefore the assumption has been that the NGSS will remain unscreened. While the ADP shows mitigation planting around the development, the location on extremely steep earth bunds undermines the potential for successful establishment and, therefore, the mitigation effects of this planting is not considered in this assessment.

9.3.2 Surfleet and Gosberton Marsh LLCA

454. In the main assessment of the effects of the OnSS on Surfleet and Gosberton Marsh LLCA, presented in section 7.2, the sensitivity of this LLCA is assessed as medium-high, the magnitude of change is assessed as ranging between high and low, with also areas of no change where there will be no visibility. There will be localised effects on the Surfleet and Gosberton Marsh LLCA that will be major or moderate-major and significant out to approximately 1.3km to the north and northwest, 1.4km to the west, 1.6km to the northeast and east, 1.4km to the southeast, 1.6km to the south and 0.8km to the southwest. The effects beyond these extents will either be moderate, moderate-minor or minor and not significant or where there will be no visibility there will be no effect. The effects will be adverse, short term in respect of the construction phase and long term in respect of the operational phase, and reversible. The significant effects will reduce to not significant by year 15 owing to the growth and screening effect of the mitigation planting around the OnSS.

9.3.2.1 Cumulative Magnitude of Change

455. The cumulative magnitude of change in respect of the NGSS will be **medium-low** or **low** and with **no change** occurring in areas where there will be no visibility. The cumulative ZTV on Figure 28.14 (document reference 6.2.28.14), shows variable extents of visibility and inter-visibility. In terms of extents, the OnSS and NGSS will be theoretically visible across much of the LLCA. Along the eastern part of the LLCA there will be no visibility of NGSS owing to the

screening effect of the intervening embankments along the River Welland and, therefore, no change.

456. Visibility of NGSS occurs within the LLCA from a minimum of approximately 1.3km although visibility will typically comprise only the upper parts of NGSS owing again to the screening effect of the River Welland embankment and will be further reduced by the additional screening effect of intervening tree cover and buildings. Here the cumulative magnitude of change will be medium-low owing to the limited visibility of the NGSS and despite the influence of the readily visible OnSS. While those parts of the LLCA further west will experience a reduced screening effect from the River Welland embankment, the increased separation distance from the NGSS and the greater accumulation of intervening tree cover and buildings will keep the cumulative magnitude of change at medium-low. Across the more distant northern, western and southern parts of the LLCA, the magnitude of change will drop to low or no effect where there is no visibility.

457. The mitigation planting will act to reduce the cumulative magnitude of change from medium-low or low to **low** or **negligible** as it will come to screen the OnSS from much of the local landscape after an approximate 15 year period of growth. While it may be that the NGSS will still be visible and have an influence on local landscape character, the cumulative nature of this effect will be moderated by the limited visibility of the OnSS.

458. The cumulative magnitude of change in respect of the application stage ADP will be **medium-high** or **medium** in an area defined by the A16 to the west, by the Welland River to the east, by the OnSS to the north and by Surfleet Seas End to the south. Beyond this area the cumulative magnitude of change will be **medium-low** or **low** and with **no change** occurring in areas where there will be no visibility. The OnSS and the ADP will be theoretically visible across much of the LLCA owing to the large footprints and heights of both developments. In the cumulative assessment it is assumed the ADP will form the cumulative baseline to which the OnSS will be added. Although large scale industrial development will form a feature of the cumulative baseline, the addition of the OnSS will form a substantial addition that will make large scale developments the defining feature of much of this LLCA.

459. The mitigation planting will act to reduce the cumulative magnitude of change from medium-high or medium to **medium-low** or **low** as it will come to screen the OnSS from much of the local landscape after an approximate 15 year period of growth. While it may be that the ADP will still be visible and have an influence on local landscape character, the cumulative nature of this effect will be moderated by the limited visibility of the OnSS.

9.3.2.2 Cumulative Significance of Effect

460. The cumulative effect of the OnSS in conjunction with the NGSS will be **not significant** at a **moderate** or **moderate-minor** level, with also areas of **no effect** occurring where there is no visibility of the OnSS, the NGSS or both. This assessment relates principally to the limited extent to which the NGSS is likely to be visible from the Surfleet and Gosberton Marsh LLCA, which in turn reduces the potential for cumulative interactions to arise. The **not significant** cumulative

effect will reduce from a moderate or moderate-minor effect to a **moderate-minor** or **minor** effect after an approximate 15-year period during which mitigation planting will grow.

461. The cumulative effect of the OnSS in conjunction with the ADP will be **significant** in the close range parts around the OnSS and ADP and at a **major-moderate** or **moderate** level. **Not significant** effects will also occur at a **moderate** or **moderate-minor** level with also areas of **no effect** occurring where there is limited or no visibility of the OnSS, the ADP or both. The significant effect will gradually reduce to a **not significant** effect at a **moderate-minor** or **minor** level after an approximate 15-year period during which mitigation planting will grow to create an effective screen between the OnSS and the surrounding local landscape.

9.3.3 Weston Marsh LLCA

462. In the main assessment of the effects of the OnSS on Weston Marsh LLCA, presented in section 7.2, the sensitivity of this LLCA is assessed as medium, the magnitude of change is assessed as ranging between high and low, with also areas of no change where there will be no visibility. The overall effect of the construction and operational phases of the OnSS on the Weston Marsh LLCA will be not significant at a moderate-minor or minor level. This assessment relates chiefly to the limited extent to which the OnSS will be visible across this LLCA owing to the screening effect of the intervening embankment along the River Welland, as well as tree cover and, to a lesser extent, rural buildings.

9.3.3.1 Cumulative Magnitude of Change

463. The cumulative magnitude of change on the Weston Marsh LLCA will range between **medium-low** or **low** and with **no change** occurring in areas where there will be no visibility. The cumulative ZTV on Figure 28.14 (document reference 6.2.28.14), shows variable extents of visibility and inter-visibility. In terms of extents, NGSS will be theoretically visible across much of the LLCA. Along the western part of the LLCA there will be no visibility of the OnSS owing to the screening effect of the intervening embankments along the River Welland and, therefore, no change.

464. Visibility of the OnSS occurs within the LLCA from a range of approximately 2km although visibility will typically comprise only the upper parts of the OnSS owing again to the screening effect of the River Welland embankment. Here the cumulative magnitude of change will be medium-low. While those parts of the LLCA further east will experience a reduced screening effect from the River Welland embankment, the increased separation distance from the OnSS and the greater accumulation of intervening tree cover will keep the cumulative magnitude of change at medium-low. Across the more distant northern, eastern and southern parts of the LLCA, the magnitude of change will drop to low or no effect where there is no visibility.

465. The mitigation planting will act to reduce the cumulative magnitude of change from medium-low or low to **low** or **negligible** as it will come to screen the OnSS from much of the local landscape after an approximate 15-year period of growth. While it may be that the NGSS will still be visible and have an influence on local landscape character, the cumulative nature of this effect will be moderated by the limited visibility of the OnSS.

9.3.3.2 Cumulative Significance of Effect

466. The cumulative effect of the OnSS in conjunction with the NGSS will be **not significant** ranging in level from **moderate-minor** to **minor** with also areas of **no effect** occurring where there is no visibility of the OnSS, the NGSS or both. This assessment relates principally to the limited extent to which the OnSS is likely to be visible from the Weston Marsh LLCA, which in turn reduces the potential for cumulative interactions to arise. The **not significant** cumulative effect will reduce from a moderate-minor or minor effect to a **minor** effect after an approximate 15-year period during which mitigation planting will grow.

9.3.4 Viewpoint 1: Marsh Lane near Manor House

467. In the main assessment of the effects of the OnSS on Viewpoint 1: Marsh Lane near Manor House, presented in section 7.3, the sensitivity of residents is assessed as medium-high and the sensitivity of road-users is assessed as medium, the magnitude of change is assessed as medium-high at both the construction and operational phase, and the effect is assessed as significant at a major-moderate level for residents and significant at a moderate level for road-users. The medium-high magnitude of change will gradually reduce over the approximate 15-year period during which mitigation planting will grow and practically screen the OnSS, and the effect will reduce from significant to not significant at a moderate-minor or minor level.

468. The cumulative assessment considers the addition of the OnSS to the application stage ADP. The pre-application stage NGSS will not be readily visible from this viewpoint.

9.3.4.1 Cumulative Magnitude of Change

469. The cumulative magnitude of change will be **medium**. The ADP will be seen at a minimum of approximately 2.1km making it a relatively distant feature in the view. The OnSS will be seen to its full extent and to the right of the ADP. At a minimum of approximately 1.2km the OnSS will appear closer range and as the more prominent of the two developments, with its addition seen to spread the extent of development in this view. While the OnSS will have a notable influence on this viewpoint, the ADP will have a lesser influence owing to its more distant location and more compact footprint, and this will limit the overall cumulative effect.

470. The cumulative magnitude of change will reduce from medium to **no change** owing to the screening effect of mitigation planting over the first 15 years of growth. This will effectively screen the ADP and much of the OnSS such that there will no longer be a cumulative effect.

9.3.4.2 Cumulative Significance of Effect

471. The cumulative effect will be **significant** at a **moderate** level. The cumulative effect will be adverse, long term and reversible. The medium cumulative magnitude of change will gradually reduce to no change over the approximate 15-year period during which mitigation planting will grow to increase the screening of the OnSS, and there will be **no cumulative effect**.

9.3.5 Viewpoint 2: A16 near Marsh Lane junction

472. In the main assessment of the effects of the OnSS on Viewpoint 2: A16 near Marsh Lane

junction, presented in section 7.3, the sensitivity of residents is assessed as medium-high and the sensitivity of road-users is assessed as medium, the magnitude of change is assessed as high at both the construction and operational phase, and the effect is assessed as significant at a major level for residents and significant at a major-moderate level for road-users. The high magnitude of change will gradually reduce to negligible or no change over the approximate 15-year period during which mitigation planting will grow and screen the OnSS, and the effect will reduce from significant to not significant at a minor level or there will be no change.

473. The cumulative assessment considers the addition of the OnSS to the application stage ADP. The pre-application stage NGSS will not be readily visible from this viewpoint.

9.3.5.1 Cumulative Magnitude of Change

474. The cumulative magnitude of change will be **medium**. The ADP will be seen at a minimum of approximately 1.6km to the south, set between the A16 roadside planting and the overhead electricity transmission line tower. As the height of the larger ADP buildings is almost 19m it will appear to be of a similar scale as the OnSS, albeit with a more compact footprint. At a minimum of approximately 0.7km the OnSS will appear closer range, the more prominent of the two developments and seen to spread the extent of development in this view. While the OnSS will have a notable influence on this viewpoint, the ADP will have a lesser influence owing to its more distant location and more compact extent, and this will limit the overall cumulative effect.

475. The cumulative magnitude of change will reduce from medium to **no change** owing to the screening effect of mitigation planting over the first 15 years of growth. This will effectively screen the ADP and partly screen the OnSS, such that there will no longer be a cumulative effect.

9.3.5.2 Cumulative Significance of Effect

476. The cumulative effect will be **significant** at a **moderate** level. The cumulative effect will be adverse, long term and reversible. The medium cumulative magnitude of change will gradually reduce to no change over the approximate 15-year period during which mitigation planting will grow to increase the screening of the OnSS, and there will be **no cumulative effect**.

9.3.6 Viewpoint 4: Macmillan Way at Surfleet Bank

477. In the main assessment of the effects of the OnSS on Viewpoint 4: Macmillan Way at Surfleet Bank, presented in section 7.3, the sensitivity of residents and walkers is assessed as medium-high and the sensitivity of road-users is assessed as medium, the magnitude of change is assessed as medium-high at both the construction and operational phase, and the effect is assessed as significant at a major-moderate level for residents and walkers and significant at a moderate level for road-users. The medium-high magnitude of change will gradually reduce to low over the approximate 15-year period during which mitigation planting will grow and practically screen the OnSS, and the effect will reduce from significant to not significant at a moderate-minor or minor level.

478. The cumulative assessment considers the addition of the OnSS to the pre-application stage

NGSS and application stage ADP, both of which will be visible from this viewpoint.

9.3.6.1 Cumulative Magnitude of Change

479. The addition of the OnSS to a cumulative baseline comprising the application stage ADP will give rise to a **medium-high** cumulative magnitude of change for walkers and a **low** cumulative magnitude of change for residents and road-users. The ADP will be seen at a minimum of approximately 0.9km to the west, in a location to the south of the overhead electricity transmission line and with much of the development readily visible to walkers on the Macmillan Way, albeit with some screening from intervening farm buildings and tree cover. With the maximum height of the tallest ADP building at approximately 18m, this development will have a notable effect on the view. The OnSS will be seen at a minimum of approximately 1.2km to the northwest, and will be seen to almost its full extents, albeit with some screening from intervening farm buildings and tree cover. The relatively close range of both these developments combined with the relatively full extents of visibility, will give rise to a notable cumulative effect on walkers, despite the baseline influence from the overhead electricity transmission line and intensive agriculture. The views of residents and road-users will remain largely unaffected owing to the screening effect of tree cover and buildings, although there may be some glimpsed views of the ADP that will give rise to a moderated cumulative effect.

480. The cumulative magnitude of change will reduce from medium-high or low to **low** for walkers and **negligible** for residents and road-users owing to the screening of the OnSS by the mitigation planting within 15 years of growth. While the ADP may still be visible, the limited visibility of the OnSS will limit the cumulative effect.

481. The addition of the OnSS to a cumulative baseline comprising the pre-application stage NGSS will give rise to a **medium** cumulative magnitude of change for walkers and a **low** cumulative magnitude of change for residents and road-users. From this viewpoint on the elevated MacMillan Way, the open views of walkers will be experienced a minimum of approximately 1.2km west towards the OnSS and a minimum of approximately 1.7km southeast towards the NGSS. The OnSS will introduce a similar large scale energy development in the opposite sector of the view to the NGSS with the effect of maximising the spread of influence for this type of development. The views of residents and road-users will remain largely unaffected owing to the screening effect of the River Welland embankment, tree cover and buildings, although there may be some glimpsed views of the NGSS that will give rise to a moderated cumulative effect.Both the OnSS and the NGSS will be seen at relatively close range and occupying a notable proportion of the wider view. They will appear at variance with the relatively small scale and undeveloped character of the rural landscape, albeit with a baseline influence from the overhead electricity transmission lines. The cumulative magnitude of change will, however, be moderated by the partial screening of the NGSS by the intervening mature tree cover around Crowtree Farm.

482. The cumulative magnitude of change will reduce from medium or low to **low** for walkers and **negligible** for residents and road-users owing to the screening of the OnSS by the mitigation

planting within 15 years of growth. While the NGSS may still be visible, the limited visibility of the OnSS will limit the cumulative effect.

483. In considering the effect of adding the OnSS to a cumulative baseline comprising both the ADP and the NGSS, the cumulative effect will be **medium-high** for walkers and **low** for residents and road-users. The addition of the OnSS will add another relatively close range and large-scale energy development to a cumulative context comprising the NGSS to the southeast and the ADP to the southwest. While this will give rise to a notable effect in respect of the views of walkers, the screening effect of the River Welland embankment, tree cover and buildings will moderate the effect on residents and road-users.

484. The cumulative magnitude of change will reduce from medium-high or low to **low** for walkers and **negligible** for residents and road-users owing to the screening of the OnSS by the mitigation planting within 15 years of growth. While the ADP and NGSS may still be visible, the limited visibility of the OnSS will limit the cumulative effect.

9.3.6.2 Cumulative Significance of Effect

485. The cumulative effect of the OnSS in conjunction with the ADP will be **significant** at a **major-moderate** level for walkers, and **not significant** at a **moderate-minor** or **minor** level for residents and road-users. The significant effect on walkers will reduce to not significant at a moderate-minor level and the not significant effect on residents and road-users will remain not significant but at a minor level, by year 15 during which mitigation planting will grow to largely screen the OnSS.

486. The cumulative effect of the OnSS in conjunction with the NGSS will be **significant** at a **moderate** level for walkers, and **not significant** at a **moderate-minor** or **minor** level for residents and road-users. The significant effect on walkers will reduce to **not significant** at a **moderate-minor** level and the not significant effect on residents and road-users will remain **not significant** but at a **minor** level, by year 15 during which mitigation planting will grow to largely screen the OnSS.

487. The cumulative effect of the OnSS in conjunction with the ADP and NGSS will be **significant** at a **major-moderate** level for walkers, and **not significant** at a **moderate-minor** or **minor** level for residents and road-users. The significant effect on walkers will reduce to **not significant** at a **moderate-minor** level and the not significant effect on residents and road-users will remain **not significant** but at a **minor** level, by year 15 during which mitigation planting will grow to largely screen the OnSS.

488. The cumulative effects will be adverse, long term and reversible. The m

9.3.7 Viewpoint 5: Macmillan Way near Welland House Farm

489. In the main assessment of the effects of the OnSS on Viewpoint 5: Macmillan Way near Welland House Farm, presented in section 7.3, the sensitivity of residents and walkers is assessed as medium-high and the sensitivity of road-users is assessed as medium, the magnitude of change is assessed as medium-high at both the construction and operational

phases, and the effect is assessed as significant at a major-moderate level for residents and walkers and significant at a moderate level for road-users. The magnitude of change will gradually reduce from medium-high to low during the approximate 15-year period during which mitigation planting will grow to largely screen the OnSS, and the effect will reduce from significant to not significant at a moderate-minor or minor level.

490. The cumulative assessment considers the addition of the OnSS to the scoping NGSS and application stage ADP, both of which will be visible from this viewpoint.

9.3.7.1 Cumulative Magnitude of Change

491. The addition of the OnSS to a cumulative baseline comprising the application stage ADP will give rise to a **medium** cumulative magnitude of change for walkers and a **low** cumulative magnitude of change for residents and road-users. The ADP will be seen at a minimum of approximately 1.8km to the west, in a location to the south of the overhead electricity transmission line and with much of the development readily visible, albeit with some screening from intervening farm buildings and tree cover. The ADP will have a notable influence on the views of walkers owing to the height of the buildings and the extent of the footprint, although the separation distance will reduce the perceived scale of the plant. The OnSS will be seen at a minimum of approximately 1.3km to the northwest, and will be seen to almost its full extents, albeit with some screening from intervening farm buildings and tree cover. The relatively close range of both these developments combined with the relatively full extents of visibility, will give rise to a notable cumulative effect, despite the baseline influence from the overhead electricity transmission line and intensive agriculture. The views of residents and road-users will remain largely unaffected owing to the screening effect of tree cover and buildings, although there may be some glimpsed views of the ADP that will give rise to a moderated cumulative effect.

492. The cumulative magnitude of change will reduce from medium or low to **low** for walkers and **negligible** for residents and road-users owing to the screening of the OnSS by the mitigation planting within 15 years of growth. While the ADP may still be visible, the limited visibility of the OnSS will limit the cumulative effect.

493. The addition of the OnSS to a cumulative baseline comprising the scoping stage NGSS will give rise to a **medium-low** cumulative magnitude of change for walkers and a **low** cumulative magnitude of change for residents and road-users. From this viewpoint on the elevated MacMillan Way, the open views of walkers will be experienced a minimum of approximately 1.3km west towards the OnSS and a minimum of approximately 2.1km southeast towards NGSS. While the OnSS will be visible to almost its full extents, visibility of the NGSS will be limited by a combination of the separation distance and the screening effect of intervening trees and farm buildings. This limited visibility will moderate the cumulative magnitude of change as the effect will relate principally to the OnSS rather than the OnSS in conjunction with the NGSS. The OnSS will nonetheless introduce a similar large scale energy development in the opposite sector of the view to the NGSS with the effect of maximising the spread of influence. The views of residents and road-users will remain largely unaffected owing to the screening effect of the

River Welland embankment, tree cover and buildings, although there may be some glimpsed views of the NGSS that will give rise to a moderated cumulative effect.

494. The cumulative magnitude of change will reduce from medium-low or low to **low** for walkers and **negligible** for residents and road-users owing to the screening of the OnSS by the mitigation planting within 15 years of growth. While the NGSS may still be visible, the limited visibility of the OnSS will limit the cumulative effect.

495. In considering the effect of adding the OnSS to a cumulative baseline comprising both the ADP and the NGSS, the cumulative effect will be **medium** for walkers and **low** for residents and road-users**.** The addition of the OnSS will add another relatively close range and large-scale energy development to a cumulative context comprising the ADP to the southwest. Although the NGSS will have a lesser influence owing to its greater separation distance and limited visibility, it will still add to the cumulative interaction, albeit predominantly influenced by the ADP and addition of the OnSS.

496. The cumulative magnitude of change will reduce from medium or low to **low** for walkers and **negligible** for residents and road-users owing to the screening of the OnSS by the mitigation planting within 15 years of growth. While the ADP and NGSS may still be visible, the limited visibility of the OnSS will limit the cumulative effect.

9.3.7.2 Cumulative Significance of Effect

497. The cumulative effect of the OnSS in conjunction with the ADP will be **significant** at a **moderate** level, for walkers, and **not significant** at a **moderate-minor** or **minor** level for residents and road-users. The significant effect on walkers will reduce to **not significant** at a **moderate-minor** level and the not significant effect on residents and road-users will remain **not significant** but at a **minor** level, by year 15 during which mitigation planting will grow to largely screen the OnSS.

498. The cumulative effect of the OnSS in conjunction with the NGSS will be **significant** at a **moderate** level for walkers, and **not significant** at a **moderate-minor** or **minor** level for residents and road-users. The significant effect on walkers will reduce to **not significant** at a **moderate-minor** level and the not significant effect on residents and road-users will remain **not significant** but at a **minor** level, by year 15 during which mitigation planting will grow to largely screen the OnSS.

499. The cumulative effect of the OnSS in conjunction with the ADP and NGSS will be **significant** at a **moderate** level for walkers, and **not significant** at a **moderate-minor** or **minor** level for residents and road-users. The significant effect on walkers will reduce to **not significant** at a **moderate-minor** level and the not significant effect on residents and road-users will remain **not significant** but at a **minor** level, by year 15 during which mitigation planting will grow to largely screen the OnSS.

500. The cumulative effect will be adverse, long term and reversible.

9.3.8 Viewpoint 6: Reservoir Road, Surfleet Seas End

501. In the main assessment of the effects of the OnSS on Viewpoint 6: Reservoir Road, Surfleet Seas End, presented in section 7.3, the sensitivity of residents and walkers is assessed as medium-high and the sensitivity of road-users is assessed as medium, the magnitude of change is assessed as medium-low at both the construction and operational phase, and the effect is assessed as not significant at a moderate level for residents and walkers and not significant at a moderate-minor level for road-users. The medium-low magnitude of change will gradually reduce to low over the approximate 15-year period during which mitigation planting will grow and partly screen the OnSS, and the effect will remain not significant at a moderate-minor or minor level.

9.3.8.1 Cumulative Magnitude of Change

502. The cumulative magnitude of change will be **medium-low**. From this viewpoint on the northern edge of Surfleet Seas End, the OnSS will be partly visible between middle range tree cover at a minimum of approximately 2.0km north and the ADP will be visible at a minimum of approximately 1.0km also to the north, albeit seen to the left of the OnSS. The cumulative assessment considers the addition of the OnSS to a cumulative baseline comprising the ADP, which will be seen more fully owing to the lesser presence of intervening tree cover and its closer proximity to the viewpoint. While it is likely that the ADP will have a notable influence on this viewpoint, the addition of the OnSS will have a limited cumulative effect owing to the limited extent to which it will be visible. While the OnSS will be seen to extend the influence of energy developments within this northern sector of the view, the separation distance and the extent of screening as well as the baseline influence from the overhead electricity transmission lines will moderate the cumulative effect.

503. The cumulative magnitude of change will reduce from medium-low to **low** owing to the screening effect of mitigation planting over the first 15 years of growth, which will increase the extent of screening albeit with the upper parts of the OnSS still visible.

9.3.8.2 Cumulative Significance of Effect

504. The cumulative effect will be **not significant** at a **moderate** or **moderate-minor** level. The cumulative effect will be adverse, long term and reversible. The medium-low cumulative magnitude of change will gradually reduce to low over the approximate 15-year period during which mitigation planting will grow to increase the screening of the OnSS, and the cumulative effect will remain **not significant** at a **moderate-minor** or **minor** level.

9.4 Summary of Cumulative Effects

505. The assessment of cumulative effects has considered the effects of the onshore ECC in conjunction with two residential developments, the effects of the 400kV cable corridor in conjunction with the NGSS and the effects of the OnSS in conjunction with the NGSS and ADP. In respect of the onshore ECC, there was the potential that the construction of the proposed residential developments in Hogsthorpe and in Fosdyke would give rise to a significant

cumulative effect. The assessment, however, found that the effects on residents, road-users and recreational users would be not significant owing to the relatively small scale of the onshore ECC, the limited influence of the residential development and / or the onshore ECC in relation to the separation distances from the receptors, and the baseline influence from the settlements, roads and modified farmland. In respect of the 400kV cable corridor, significant cumulative effects are predicted to occur on the residents at School Cottages and road-users on Marsh Road owing to the cumulative effect with the nearby NGSS. All these effects will be adverse, short term and reversible as they will only occur during the extent of the construction phase.

506. In respect of the OnSS, there was the potential that the presence of the application stage ADP in Surfleet Marsh and the pre-application stage NGSS in Weston Marsh would give rise to significant cumulative effects. Two LLCAs and five viewpoints were identified in the preliminary assessment to have the potential to be significantly affected. The detailed assessment of these receptors demonstrated that the Weston Marsh LLCA will not be subject to significant cumulative effects owing to the screening effect of the River Welland embankments, as well as tree cover, hedgerows and buildings, but that the Surfleet and Gosberton Marsh LLCA will be significantly affected within the local landscape owing to the cumulative interaction between the OnSS and the ADP.

507. Viewpoints 4 and 5, located on the River Welland embankment, will be subject to significant cumulative effects. These effects relate largely to the elevated position of the Macmillan Way, the clear views of the OnSS and the ADP to the west and the NGSS to the southeast and the cumulative influence these will have on walkers along this route. There will also be significant cumulative effects on residents and road-users represented by Viewpoints 1 and 2 which are located to the north of the OnSS and from where the OnSS will be seen in conjunction with the ADP.

508. All significant cumulative effects will be reduced to not significant or no cumulative effect in the 15 year period during which mitigation planting will grow to effectively screen the OnSS.

10 Inter-Relationships

Table 10.1: Inter-relationships between the LVIA and other Chapters in the ES

Topic Chapter	Where addressed in the LVIA	Rationale
Volume 1, Chapter 21: Onshore Ecology (document reference 6.1.21).	Section 5 Basis of the Assessment. Sections 7, 7.2 and 7.3.	Both chapters consider the potential effects of hedgerow and tree removal, the LVIA considering the impact on hedgerows and trees as landscape elements, and the Onshore Ecology assessment considering the impact on hedgerows and trees as ecological assets. Both chapters consider the mitigation of hedgerow and tree loss in respect of planting proposed as outline landscape mitigation principles.
Volume 1, Chapter 20: Onshore Archaeology and Cultural Heritage (document reference 6.1.20).	Sections 4, 7.2 and 7.3.	Both chapters consider the potential effects of the onshore elements of the Project on designated Registered Historic Parks and Gardens and their setting within the landscape.
Volume 1, Chapter 29: Socio-Economics (document reference 6.1.29).	Section 7.3.	Both chapters consider the potential effects of the onshore elements of the Project on the visual amenity of recreational users in the local area.
Volume 1, Seascape, Landscape and Visual Impacts Assessment (SLVIA) Chapter 17 (document reference 6.1.17).	Section 5.	The SLVIA (document reference 6.1.17) considers the inter-relationship between the SLVIA and the LVIA

11 Transboundary Effects

509. The Scoping Opinion provided by the Planning Inspectorate agrees that transboundary effects in relation to the LVIA topic, can be scoped out of the assessment, as presented in the summary of consultation responses in Table 3.1. It is considered no transboundary effects will arise and, therefore, no assessment is included.

12 Conclusions

12.1 Summary of Effects

12.1.1 Physical Effects

510. The landscape will be directly affected by the onshore elements of the Project. The siting and design of the onshore elements of the Project has sought to minimise the removal of landscape elements across the LVIA study area. As a result of this, physical landscape effects within the LVIA study area would be kept to a minimum to ensure that the character along the onshore ECC, 400kV cable corridor and around the OnSS are retained for future benefit. However, likely significant effects will occur within localised areas related to the removal of higher sensitivity landscape elements such as trees, taller hedgerows and hedgerow trees along the onshore ECC, 400kV cable corridor and around the OnSS.

12.1.2 Landscape Effects

511. No significant effects on landscape character will arise as a result of the construction of the landfall, onshore ECC or 400kV cable corridor or as a result of operational effects associated with these components of the onshore infrastructure. This assessment relates to the relatively small scale of the construction works in respect of the broad landscape character areas and their baseline character which is defined by arable farmland which is routinely disturbed by heavy machinery as part of agricultural practices.

512. In respect of the OnSS, this is situated in the Fens NCA which extends from Skegness in the north to Cambridge in the south, and from Peterborough in the west to Kings Lynn in the east. For the purposes of the LVIA, two LLCAs were identified in the OnSS study area in order to enable a more detailed assessment.

513. The assessment has shown that there will be localised effects on the Surfleet and Gosberton Marsh LLCA within which the OnSS will be located. These effects will be major or major-moderate and significant out to approximately 1.3km to the north and northwest, 1.4km to the west, 1.6km to the northeast and east, 1.4km to the southeast, 1.6km to the south and 0.8km to the southwest. The effects beyond these extents will either be moderate, moderate-minor or minor and not significant or where there will be no visibility there will be no effect. The effects will be adverse, short term in respect of the construction phase and long term in respect of the operational phase, and reversible.

514. There will be no significant effects on the Weston Marsh LLCA which lies to the east of the River Welland. This assessment relates to a combination of the increased separation distance from the OnSS, and the screening effect of the River Welland embankment and other tree cover and buildings.

515. The significant effects on the Surfleet and Gosberton Marsh LLCA will be reduced to not significant within the first 15 years owing to the screening effect of the mitigation planting

following 15 years of growth.

516. There will be no significant effects on landscape planning designations, such as AONBs and RPGs, owing to none occurring within the LVIA study area.

12.1.3 Visual Effects

517. The OnSS is the component of the onshore infrastructure with greatest potential to give rise to significant visual effects, owing to its large-scale and modern appearance which will be at variance with the predominantly rural character of the receiving landscape. Eleven viewpoints have been selected to represent the views of residents, road-users, walkers and horse-riders in the local area.

518. The assessment has found that the effect of the OnSS on the six closest viewpoints within 1.3km will be significant during the construction and operational phases. This assessment relates to the scale and appearance of the OnSS, as well as the relatively open and exposed nature of the flat and low-lying farmed landscapes where the OnSS will be located. The effect on the five viewpoints that lie beyond 1.3km will be not significant owing principally to the accumulation of small-scale rural features, such as trees, hedgerows, farmsteads and embankments which reduce the extent and level of visibility beyond these close-ranges.

519. Embedded mitigation forms part of the Project and extensive mitigation planting is proposed for the local landscape surrounding the OnSS. Mitigation planting has been designed to create an effective screen around the OnSS and will remove all significant effects on surrounding visual receptors within the first 15 years of operation.

520. In respect of the construction of the landfall, onshore ECC and 400kV cable corridor, the occurrence of significant effects on visual receptors will occur in localised areas typically where TCCs occur. The effects will occur where road-users pass adjacent to or between TCCs or where residents will experience relatively close-range views of TCCs. The careful siting of the onshore ECC and 400kV cable corridor combined with the location of almost all open-cut trenching in arable farmland and the extensive use of trenchless techniques at approximately 211 locations has greatly reduced the potential for significant effects on visual receptors to arise along the length of the onshore ECC and 400kV cable corridor.

12.1.4 Cumulative Effects

521. The assessment of cumulative effects has considered the effects of the onshore ECC in conjunction with two residential developments, the effects of the 400kV cable corridor in conjunction with the NGSS and the effects of the OnSS in conjunction with the NGSS and ADP. In respect of the onshore ECC, there was the potential that the construction of the proposed residential developments in Hogsthorpe and in Fosdyke would give rise to a significant cumulative effect. The assessment, however, found that the effects on residents, road-users and recreational users would be not significant owing to the relatively small scale of the onshore ECC, the limited influence of the residential development and / or the onshore ECC in relation to the separation distances from the receptors and the baseline influence from the

settlements, roads and modified farmland. In respect of the 400kV cable corridor, significant effects are predicted to occur on the residents at School Cottages and road-users on Marsh Road owing to the cumulative effect with the nearby NGSS. All these effects will be adverse, short term and reversible as they will only occur during the extent of the construction phase.

522. In respect of the OnSS, there was the potential that the presence of the application stage ADP in Surfleet Marsh and the pre-application stage NGSS in Weston Marsh would give rise to significant cumulative effects. Two LLCAs and five viewpoints were identified in the preliminary assessment to have the potential to be significantly affected. The detailed assessment of these receptors showed that the Weston Marsh LLCA will not be subject to significant cumulative effects owing to the screening effect of the River Welland embankments, as well as tree cover, hedgerows and buildings, but that the Surfleet and Gosberton Marsh LLCA will be significantly affected in the local landscape owing to the cumulative interaction between the OnSS and the ADP.

523. Viewpoints 4 and 5, located on the River Welland embankment, will be subject to significant cumulative effects. These effects relate largely to the elevated position of the Macmillan Way, the clear views of the OnSS and the ADP to the west and the NGSS to the southeast and the cumulative influence these will have on walkers along this route. There will also be significant cumulative effects on residents and road-users represented by Viewpoints 1 and 2 which are located to the north of the OnSS and from where the OnSS will be seen in conjunction with the ADP.

524. All significant cumulative effects will be reduced to not significant or no cumulative effect in the 15 year period during which mitigation planting will grow to effectively screen the OnSS.

12.2 Conclusions

525. This LVIA has considered the potential effects that the onshore elements of the Project may have on the existing landscape resource of the onshore LVIA study area and the visual amenity of its receptors. It has considered the physical effects of the landfall, onshore ECC, 400kV cable corridor and OnSS on the physical elements affected during construction, the landscape character effects during the construction and operation of the OnSS, and the visual effects during the construction of the landfall, onshore ECC and 400kV cable corridor, and during the construction and operation of the OnSS.

526. During the construction phase, the majority of the physical elements at the landfall and along the OnSS will not be significantly affected, with only a small number of very localised significant effects occurring where trees and hedgerows are removed to accommodate access to the onshore ECC. During the construction phase there will be localised significant effects on residents, walkers and road-users relating principally to their close location to Primary TCCs but also locations where a concentration of Secondary TCCs and / or open cut trenching occurs.

527. During the construction phase, there will be significant effects on the local landscape character around the OnSS and out to a maximum range of 1.6km owing to the presence and

influence of the construction works and associated emerging OnSS. Significant effects over the same extents will occur during the operational phase but will gradually reduce to not significant over a 15 year period owing to the growth of mitigation planting around the OnSS.

528. During the construction phase, there will be significant effects on the visual amenity of people in the local area around the OnSS and out to a maximum range of 1.3km owing to the presence and influence of the construction works and associated emerging OnSS. Significant effects over the same extents will occur during the operational phase but will gradually reduce to not significant over a 5 to 15 year period owing to the growth of mitigation planting around the OnSS.

529. Significant cumulative effects are predicted to occur on local residents and road-users during the construction of the 400kV cable corridor and the NGSS. There will also be significant cumulative effects during the construction and operational phases on three representative viewpoints owing to the cumulative interaction between the OnSS and the ADP, and on two viewpoints owing to the cumulative interaction between the OnSS, application stage ADP and the NGSS. In respect of landscape character, there will be a significant cumulative effect on the Surfleet and Gosberton Marsh LLCA All significant effects will be reduced to not significant during a 5 to 15 year period during which mitigation planting will grow to create an effective screen around the OnSS.

Table 12.1: Summary of Landscape and Visual Effects

Receptor	Sensitivity	Magnitude of Change Construction	Magnitude of Change Operation	Significance of Effect
Landfall, Onshore ECC and 400kV cable corridor – Physical Effects				
Coastal Landscape	Medium-high	Low	N/A	Moderate-minor Not significant
Agricultural Land	Medium-low	Low (areas of open cut trenching)	N/A	Minor Not significant
		Medium-low (TCCs)		
		Medium-high (OnSS)		Moderate Significant
Hedgerows	Medium	Low	N/A	Minor Not significant
Trees	Medium-high	Medium-high No change	N/A	Major-moderate Significant (where removals occur) No effect

Receptor	Sensitivity	Magnitude of Change Construction	Magnitude of Change Operation	Significance of Effect
Landfall, Onshore ECC and 400kV cable corridor – Physical Effects				
S1 Road-users on Roman Bank	Medium			Moderate Significant
S1 Walkers on PRoW Ande 19/2 and 19/3 Chap 21/1	Medium-high	Medium-high	N/A	Major-moderate Significant
S1 Walkers on England Coast Path	Medium-high	Medium-high	N/A	Major-moderate Significant
S1 Residents on Bracken Lane	Medium-high	Medium-low	N/A	Moderate Not significant
S1 Road-users on A52 South End	Medium	Medium	N/A	Moderate (Significant)
S2 Road-users on Marsh Lane	Medium	Medium	N/A	Moderate (Significant)
S3 / S4 Road-users on A158	Medium	Medium-high	N/A	Moderate (Significant)
S5 Road-users on A52 Croft Bank	Medium	Medium-high	N/A	Moderate (Significant)
S5 Residents on A52 Croft Bank	Medium-high	High or low	N/A	Major (Significant) or Moderate-minor (not significant)
S5 Road-users on Wainfleet Road	Medium	Medium-low	N/A	Moderate-minor (Significant)
S5 Residents on Wainfleet Road	Medium-high	Medium-low	N/A	Moderate (Not significant)
S6 / S7 Road-users on Fen Bank	Medium	Medium	N/A	Moderate (Significant)

Receptor	Sensitivity	Magnitude of Change Construction	Magnitude of Change Operation	Significance of Effect
S7 Road-users on Skirmore Road / Howgarth Lane	Medium	Medium-low	N/A	Moderate-minor (Not significant)
S7 Residents on Skirmore Road / Howgarth Lane	Medium-high	Medium-low or low	N/A	Moderate or moderate-minor (Significant)
S8 Road-users on Double Bank	Medium	Medium-high	N/A	Moderate (Significant)
S9 Road-users on Ings Road	Medium	Medium-high	N/A	Moderate (Significant)
S9 Road-users on A52 near Haltoft End	Medium (Road-users on A52)	Medium-high	N/A	Moderate (Significant)
S10 Road-users on Cut End Road / Woad Lane	Medium	Medium	N/A	Moderate (Significant)
S10 Road-users on Southfield Lane	Medium	Medium	N/A	Moderate (Not significant)
S10 Residents on Southfield Lane	Medium-high	Medium-low or low	N/A	Moderate or Moderate-minor (Not significant)
S11 Residents at Bleak House Farm	Medium-high	Medium-high	N/A	Major-moderate (Significant)
S11 Road-users on Wyberton Roads	Medium	Medium	N/A	Moderate (Significant)

Receptor	Sensitivity	Magnitude of Change Construction	Magnitude of Change Operation	Significance of Effect
S12 Road-users on Marsh Road	Medium	Medium-high	N/A	Moderate (Significant)
S13 Residents Fosdyke Bridge	Medium-high	Medium-high	N/A	Major-moderate (Significant)
S13 Walkers on Macmillan Way	Medium-high	Medium	N/A	Moderate (Significant)
S14 Walkers on Macmillan Way	Medium-high	Medium	N/A	Moderate (Significant)
S14 Road-users Marsh Road	Medium	Medium	N/A	Moderate (Significant)
OnSS – Landscape and Visual Effects				
Surfleet and Gosberton Marsh LLCA	Medium-high	High, medium-high, or medium across the part of the LLCA around the OnSS between 0.8 to 1.6km. Medium-low, low or no change on remaining parts of the LLCA	High, medium-high, or medium across the part of the LLCA around the OnSS between 0.8 to 1.6km. Medium-low, low or no change on remaining parts of the LLCA. Reducing to medium-low, low or negligible by year 15	**Major** or **moderate-major** and **significant** out to approximately 1.3km to the north and northwest, 1.4km to the west, 1.6km to the northeast and east, 1.4km to the southeast, 1.6km to the south and 0.8km to the southwest. **Moderate**, **moderate-minor** or **minor** and **not significant** beyond these extents. **No effect** where there is no visibility. Reducing to **moderate-minor** or **minor** and **not significant** by year 15.
Weston Marsh LLCA	Medium	Medium-low or low. No change.	Medium-low or low. No change.	**Moderate-minor** or **minor** and **not significant**.

Receptor	Sensitivity	Magnitude of Change Construction	Magnitude of Change Operation	Significance of Effect
			Reducing to low or negligible by year 15	**No effect** where there is no visibility. Reducing to **minor** and **not significant** by year 15.
Viewpoint 1: Marsh Lane near Manor House	Medium-high – residents Medium – road-users	Medium-high	Medium-high reducing to low by year 15.	Major-moderate or moderate and **significant** reducing to moderate-minor or minor and **not significant** by year 15.
Viewpoint 2: A16 near Marsh Lane junction	Medium-high – residents Medium – road-users	High	High reducing to negligible or no change	Major or major-moderate and **significant** reducing to minor and **not significant** or **no effect** by year 15.
Viewpoint 3: A16 near Gosberton Bank junction	Medium-high – residents Medium – road-users	Medium-high	Medium-high reducing to low between years 5 and 15.	Major-moderate or moderate and **significant** reducing to moderate-minor or minor and **not significant** by year 15.
Viewpoint 4: Macmillan Way near Ship Inn	Medium-high – residents Medium – road-users	Medium-high	Medium-high reducing to low by year 15.	Major-moderate or moderate and **significant** reducing to moderate-minor and **not significant** by year 15.
Viewpoint 5: Macmillan Way near Welland House Farm	Medium-high – walkers Medium-high – residents Medium – road-users	Medium-high	Medium-high reducing to low by year 15.	Major-moderate or moderate and **significant** reducing to moderate-minor and **not significant** by year 15.

Receptor	Sensitivity	Magnitude of Change Construction	Magnitude of Change Operation	Significance of Effect
Viewpoint 6: Reservoir Road, Surfleet Seas End	Medium-high – residents and walkers Medium – road-users	Medium-low	Medium-low reducing to low by year 15.	Moderate or moderate-minor and **not significant** reducing to moderate-minor or minor and **not significant** by year 15.
Viewpoint 7: Wragg Marsh, Marsh Road	Medium-high – residents, walkers and horse riders Medium – road-users	Negligible	Negligible remaining negligible by Year 15.	Minor and **not significant** remaining minor and **not significant** by year 15.
Viewpoint 8: Cook's Road	Medium-high – residents and walkers Medium – road-users	Medium-high	Medium-high reducing to medium-low by year 15	Major-moderate or moderate and **significant** reducing to moderate or moderate-minor and **not significant** by year 15.
Viewpoint 9: Cunsdike Lane	Medium-high – residents and walkers Medium – road-users	Medium-low	Medium-low reducing to low by year 15	Moderate or moderate-minor and **not significant** reducing to moderate-minor or minor and **not significant** by year 15.
Viewpoint 10: Willow Farm	Medium-high – residents Medium – road-users	Low	Low remaining low by year 15	Moderate-minor or minor and **not significant** remaining moderate-minor or minor and **not significant** by year 15.
Viewpoint 11: Gosberton	Medium-high – residents and walkers Medium – road-users	Low	Low remaining low by year 15	Moderate-minor or minor and **not significant** remaining moderate-minor or minor and **not significant** by year 15.

Table 12.2: Summary of Cumulative Landscape and Visual Effects

Receptor	Sensitivity	Cumulative Magnitude of Change Construction	Cumulative Magnitude of Change Operation	Cumulative Significance of Effect
Onshore ECC / 400kV Cable Corridor – Cumulative Effects				
West End, Hogsthorpe	Medium-high – residents Medium – road-users	Medium-low – residents Low – road-users	N/A	Moderate for residents, minor for road users and **not significant** for both.
Puttock Gate, Fosdyke	Medium-high – residents and recreational-users Medium – road-users	Medium-low – residents and recreational-users Low – road-users	N/A	Moderate for residents and recreational users, minor for road-users and **not significant** for all.
NGSS	Medium-high – residents Medium – road-users	Medium	N/A	Moderate for residents and road-users and **significant** for both**.**
OnSS – Cumulative Effects				
Surfleet and Gosberton Marsh LLCA (OnSS in conjunction with NGSS)	Medium-high	Medium-low, low or no change	Medium-low, low or no change	Moderate or moderate-minor and **not significant,** reducing to moderate-minor or minor and remaining **not significant** by year 15.
Surfleet and Gosberton Marsh LLCA (OnSS in conjunction with ADP)	Medium-high	Medium-high / Medium Medium-low, low or no change	Medium-high / Medium reducing to medium-low or low by year 15 Medium-low or low reducing to low or negligible by year 15 No change	Major-moderate or moderate and **significant** reducing to moderate-minor and **not significant** by year 15. Moderate or moderate-minor reducing to moderate-minor or minor and **not significant** by year 15.
Weston Marsh LLCA (OnSS in conjunction with NGSS)	Medium	Medium-low, low or no change	Medium-low, low or no change	Moderate-minor or minor and **not significant,** reducing to minor and remaining

Receptor	Sensitivity	Cumulative Magnitude of Change Construction	Cumulative Magnitude of Change Operation	Cumulative Significance of Effect
				not significant by year 15.
Viewpoint 1: Marsh lane near Manor House (OnSS in conjunction with ADP)	Medium-high – residents Medium – road-users	Medium	Medium reducing to no change by year 15	Moderate and **significant** reducing to no cumulative effect by year 15.
Viewpoint 2: A16 near March Lane junction (OnSS in conjunction with ADP)	Medium-high – residents Medium – road-users	Medium	Medium reducing to no change by year 15	Moderate and **significant** reducing to no cumulative effect by year 15.
Viewpoint 4: Macmillan Way near Ship Inn (OnSS in conjunction with ADP)	Medium-high – walkers and residents Medium – road-users	Medium-high – walkers Low – residents and road-users	Medium-high for walkers reducing to low by year 15. Low for residents and road-users reducing to negligible by year 15.	Major-moderate and **significant** for walkers reducing to moderate-minor and **not significant** by year 15. Moderate-minor or minor for residents and road-users reducing to minor and remaining **not significant** by year 15.
Viewpoint 4: Macmillan Way near Ship Inn (OnSS in conjunction with NGSS)	Medium-high – walkers and residents Medium – road-users	Medium – walkers Low – residents and road-users	Medium for walkers reducing to low by year 15. Low for residents and road-users reducing to negligible by year 15.	Moderate and **significant** for walkers reducing to moderate-minor or minor and **not significant** by year 15. Moderate-minor or minor and **not significant** for residents and road-users reducing to minor and remaining **not significant** by year 15.

Receptor	Sensitivity	Cumulative Magnitude of Change Construction	Cumulative Magnitude of Change Operation	Cumulative Significance of Effect
Viewpoint 4: Macmillan Way near Ship Inn (OnSS in conjunction with ADP and NGSS)	Medium-high – walkers and residents Medium – road-users	Medium-high – walkers Low – residents and road-users	Medium-high for walkers reducing to low by year 15. Low for residents and road-users reducing to negligible by year 15.	Major-moderate and **significant** for walkers reducing to moderate-minor or minor and **not significant** by year 15. Moderate-minor or minor for residents and road-users reducing to minor and remaining **not significant** by year 15.
Viewpoint 5: Macmillan Way near Welland House Farm (OnSS in conjunction with ADP)	Medium-high – walkers and residents Medium – road-users	Medium – walkers Low – residents and road-users	Medium for walkers reducing to low by year 15 Low for residents and road-users reducing to negligible by year 15	Moderate and **significant** reducing for walkers reducing to moderate-minor and **not significant** by year 15. Moderate-minor or minor and **not significant** for residents and road-users reducing to minor and remaining **not significant** by year 15.
Viewpoint 5: Macmillan Way near Welland House Farm (OnSS in conjunction with NGSS)	Medium-high – walkers and residents Medium – road-users	Medium-low – walkers Low – residents and road-users	Medium-low for walkers reducing to low by year 15 Low for residents and road-users reducing to negligible by year 15	Moderate and **significant** for walkers reducing to moderate-minor and **not significant** by year 15. Moderate-minor or minor and **not significant** for residents and road-users reducing to minor and remaining **not significant** by year 15.
Viewpoint 5: Macmillan Way near Welland House	Medium-high – walkers and residents	Medium for walkers	Medium for walkers reducing to low by year 15	Moderate and **significant** for walkers reducing to moderate-

Receptor	Sensitivity	Cumulative Magnitude of Change Construction	Cumulative Magnitude of Change Operation	Cumulative Significance of Effect
Farm (OnSS in conjunction with ADP and NGSS)	Medium – road-users	Low for residents and road-users	Low for residents and road-users reducing to negligible by year 15.	minor and **not significant** by year 15. Moderate-minor or minor and **not significant** for residents and road-users reducing to minor and remaining **not significant** by year 15.
Viewpoint 6: Reservoir Road, Surfleet (OnSS in conjunction with ADP)	Medium-high – residents and walkers Medium – road-users	Medium-low	Medium-low reducing to low by year 15	Moderate-minor or minor and **not significant** reducing to minor and **not significant** by year 15.

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