Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

Environmental Statement

Volume 1

Chapter 26 - Landscape and Visual Impact Assessment

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Prepared by: **LDA Design**		
Approved by: **Johiris Rodriguez Tablante, Equinor**	Date: August 2022	

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Glossary of Acronyms

AOD	Above Ordinance Datum
AONB	Area of Natural Beauty
BDC	Broadland District Council
BEIS	Department for Business Energy and Industrial Strategy
BNG	Biodiversity Net Gain
BOAT	Bridleway Open to All Traffic
CBS	Concrete Batching Systems
CIA	Cumulative Impact Assessment
DAS	Design and Access Statement
DCO	Development Consent Order
DECC	Department for Energy and Climate Change
DEP	Dudgeon Offshore Wind Farm Extension Project
EELF	The East of England Landscape Framework
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Group
EU	European Union
FOC	Fibre Optic Cable
GIS	Geographical Information System
GLVIA	The Guidelines for Landscape and Visual Impact Assessment
GREEN	East Anglia Green Energy Enablement
HDD	Horizontal Directional Drilling
HVAC	High-Voltage Alternating Current
IDB	Internal Drainage Boards
IEMA	Institute of Environmental Management and Assessment
IPC	Infrastructure Planning Commission
Km	Kilometre
LCA	Landscape Character Area
LCT	Landscape Character Type
LI TGN	Landscape Institute Technical Guidance Note
LI TIN	Landscape Institute Technical Information Note

LVIA	Landscape and Visual Impact Assessment
MMO	Marine Management Organisation
NCA	National Character Areas
NNDC	North Norfolk District Council
NNHC	North Norfolk Heritage Coast
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSBLPZ	Norwich Southern Bypass Landscape Protection Zone
NSCA	National Seascape Character Areas
NSIP	Nationally Significant Infrastructure Project
NSPLPZ	The Norwich Southern Bypass Landscape Protection Zone
OEMP	Outline Ecological Management Plan
OLEMP	Outline Landscape and Ecological Management Plan
OLEMS	Outline Landscape and Ecological Management Strategy
OLMP	Outline Landscape Management Plan
OS	Ordinance Survey
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PRoW	Public Right of Way
RVAA	Residential Visual Amenity Assessment
RWCS	Realistic Worst-Case Scenarios
SEP	Sheringham Shoal Offshore Wind Farm Extension Project
SNDC	South Norfolk District Council
SNLA	South Norfolk Landscape Assessment
SPD	Supplementary Planning Document
SVIA	Seascape and Visual Impact Assessment
UK	United Kingdom
ZTV	Zone of Theoretical Visibility
ZVI	Zone of Visual Influence

Glossary of Terms

Dudgeon Offshore Wind Farm Extension site	The Dudgeon Offshore Wind Farm Extension offshore lease area.
Dudgeon Offshore Wind Farm Extension Project (DEP)	The Dudgeon Offshore Wind Farm Extension onshore and offshore sites including all onshore and offshore infrastructure.
Order Limits	The area subject to the application for development consent, including all permanent and temporary works for SEP and DEP.
Evidence Plan Process (EPP)	A voluntary consultation process with specialist stakeholders to agree the approach, and information to support, the EIA and HRA for certain topics.
Expert Topic Group (ETG)	A forum for targeted engagement with regulators and interested stakeholders through the EPP.
Horizontal directional drilling (HDD) zones	The areas within the onshore cable corridor which would house HDD entry or exit points.
Jointing bays	Underground structures constructed at regular intervals along the onshore cable corridor to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	The point at the coastline at which the offshore export cables are brought onshore, connecting to the onshore cables at the transition joint bay above mean high water
Landscape Character Areas	These are single unique areas which are the discrete geographical areas of a particular landscape character type. Each has its own individual character and identity, even though it shares the same generic characteristics with other types. (Natural England, 2014)
Landscape Character Type	These are distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation, historical land use, and settlement pattern. (Natural England, 2014)
Landscape effects	Effects on the landscape as a resource in its own right. (Landscape Institute and IEMA, 2013)
Landscape character	A distinct and recognisable pattern of elements in the landscape that makes one landscape different

	from another, rather than better or worse. (Natural England, 2014)
Landscape quality (or condition)	A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements. (Landscape Institute and IEMA, 2013)
Landscape receptor	Defined aspects of the landscape resource that have the potential to be affected by a proposal. (Landscape Institute and IEMA, 2013)
Landscape value	The relative value that is attached to different seascape and/or landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons. (Landscape Institute and IEMA, 2013)
Magnitude (of effect)	A term that combines judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term, in duration. (Landscape Institute and IEMA, 2013)
Mitigation	Measures which are proposed to prevent, reduce and where possible offset any significant adverse effects (or to avoid, reduce and if possible remedy identified effects). (Landscape Institute and IEMA, 2013)
Offshore export cables	The cables which would bring electricity from the offshore substation platform(s) to the landfall. 220 – 230kV.
Onshore cable corridor	The area between the landfall and the onshore substation, within which the onshore cable circuits will be installed along with other temporary works for construction.
Onshore export cables	The cables which would bring electricity from the landfall to the onshore substation. 220 – 230kV.
Onshore Substation	Compound containing electrical equipment to enable connection to the National Grid.
PEIR boundary	The area subject to survey and preliminary impact assessment to inform the PEIR.
Study area	Area where potential impacts from the project could occur, as defined for each individual EIA topic.
Sheringham Shoal Offshore Wind Farm Extension site	Sheringham Shoal Offshore Wind Farm Extension lease area.

Sheringham Shoal Offshore Wind Farm Extension Project (SEP)	The Sheringham Shoal Offshore Wind Farm Extension site as well as all onshore and offshore infrastructure.
Seascape	Landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other. (HM Government, Northern Ireland Executive, Scottish Government and Welsh Assembly Government, 2011 and Marine Management Organisation, 2019A)
Sensitivity	A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor. (Landscape Institute and IEMA, 2013)
The Applicant	Equinor New Energy Limited.
Visual amenity	The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of people living, working, recreating, visiting or travelling through an area. (Landscape Institute and IEMA, 2013)
Visual effect	Effects on specific views and on the general visual amenity experienced by people. (Landscape Institute and IEMA, 2013)
Visual receptor	Individuals and/or defined groups of people who have the potential to be affected by a proposal. (Landscape Institute and IEMA, 2013)
Zone of Theoretical Visibility (ZTV)	A map, usually digitally produced, showing areas of land within which a development is theoretically visible. (Landscape Institute and IEMA, 2013)

26 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

26.1 Introduction

1. This chapter of the Environmental Statement (ES) describes the potential impacts of the proposed Sheringham Shoal Offshore Wind Farm Extension Project (SEP) and Dudgeon Offshore Wind Farm Extension Project (DEP) on landscape and visual resources, which would be affected as a result of the onshore cable corridor and onshore substation site. The onshore cable corridor extends broadly south from the landfall at Weybourne beach for approximately 37km before turning southeast and continuing to where it joins the onshore substation to the south of Norwich City.
2. An assessment of the seascape, landscape and visual impacts of the offshore development areas is provided separately in **Chapter 25 Seascape and Visual Impact Assessment (SVIA)**.
3. The chapter provides an overview of the existing environment for the proposed onshore development area, by defining the existing landscape and visual baseline environments; assessing their sensitivity to change; describing the key landscape and visual related aspects of the proposed developments; describing the nature of the anticipated change upon the landscape and visual environments; and assessing the magnitude and significance of the changes for the construction, operational and decommissioning stages of SEP and/or DEP.
4. The landscape and visual impact assessment (LVIA) has been integral to the iterative design process, which adopted a 'mitigation by design' approach. This means that during the course of the design development of the onshore components for SEP and/or DEP, there were a number of multidisciplinary workshops that sought to integrate technical, land, community, environmental, ecology and landscape constraints in the final design for the Development Consent Order (DCO) application. The LVIA therefore assumes that the proposed landscape mitigation measures are integral and embedded to the final design of SEP and/or DEP, and no additional mitigation measures are required. Further details are set out in **Chapter 4 Project Description** and **Table 26-2**.
5. This chapter has been written by LDA Design Consulting Ltd ('LDA Design'), with the LVIA undertaken with specific reference to the relevant legislation and guidance, of which the primary sources are the National Policy Statements (NPS). Details of these and the methodology used for the Environmental Impact Assessment (EIA) and Cumulative Impact Assessment (CIA) are presented in **Chapter 5 EIA Methodology** and **Section 26.4**.
6. The assessment should be read in conjunction with following linked chapters:
   - **Chapter 21 Onshore Archaeology and Cultural Heritage**; and
   - **Chapter 25 SVIA**.
7. Additional information to support the LVIA is included in **Appendix 26.1 LVIA Annexes**:
   - **Annex 26.1 LVIA Methodology;**
   - **Annex 26.2 Visualisations and Zone of Theoretical Visibility (ZTV) Studies Methodologies;**

- **Annex 26.3 Extracts from relevant landscape character assessments;**
- **Annex 26.4 Viewpoint Descriptions;**
- **Annex 26.5 Summary of Potential Impacts during the Construction and Decommissioning Phases – Onshore substation; and**
- **Annex 26.6 LVIA Figures, including Visualisations illustrating the Onshore substation.**

26.2 Consultation

8. Consultation with regard to the LVIA has been undertaken in line with the general process described in **Chapter 5 EIA Methodology** and the **Consultation Report** (document reference 5.1). The key elements to date have included:
   - EIA Scoping.
   - The Evidence Plan Process (EPP) (on-going) via the SEP and DEP Landscape and Seascape Expert Topic Group (ETG). Meetings were held prior to submission of the Preliminary Environmental Information Report (PEIR) on March 23rd and 30th 2020, with post-PEIR submission on July 21st and 28th 2021 and 2nd and 8th February 2022. A separate consultation meeting was held with the Norfolk Coast Partnership on 8th March 2022.
   - Consultation with relevant stakeholders with respect to the LVIA's proposed representative viewpoints, study areas and approach to visualisations.
   - The PEIR.
9. The feedback received throughout this process has been considered in preparing the ES. This chapter has been updated following consultation in order to produce the final assessment submitted within the DCO application.
10. **Table 26-1** provides a summary of the consultation responses received to date relevant to this topic, and details of how the Project team has had regard to the comment and how these have been addressed within this chapter.
11. The consultation process is described further in **Chapter 5 EIA Methodology**. Full details of the consultation process are presented in the **Consultation Report** (document reference 5.1), which has been submitted as part of the DCO application.

Table 26-1: Consultation Responses

Consultee	Date/ Document	Comment	Project Response
Scoping Responses			
PINS	Scoping Opinion Nov 2019	*ID 6.1.2. Visual effects from the onshore cable route (including the landfall) during operation are unlikely to be significant and can be scoped out of the assessment.* *However, the ES should assess any likely significant long-term landscape effects that could persist from landfall and cable construction activities; for example as a result of any vegetation clearance. This should take into account the effectiveness of any proposed mitigation measures.*	Visual effects from the onshore cable corridor during operation are scoped out and not assessed in this chapter. Effects due to vegetation removal that may persist beyond the construction phase are assessed in **Section 26.6**.
		ID 6.1.3. The Inspectorate recommends that the Applicant makes efforts to agree representative receptors with relevant consultation bodies, including the local planning authorities. The locations of representative receptors should be depicted on a figure within the ES.	Relevant consultation bodies have been consulted to agree representative viewpoints and receptors as described in this table.
		ID 6.1.5. The ES should provide clear definitions of the terminology used in the assessment, for example 'short-term', 'long-term' and 'temporary'.	These terms are defined in **Section 26.4.3**.
		ID 6.1.7. The study areas should be clearly explained and justified within the ES.	The study areas have been agreed with relevant consultees as described in this table and **Section 26.3.1**.
		ID 6.1.8. The Inspectorate recommends that the ES should make use of photomontages to illustrate the … onshore substation. Views should be verified and visualisations should accord with industry standards.	Photomontages of the onshore substation are provided from all viewpoints where there would be a degree of visibility to support the assessment set out in this chapter. These are presented in **Appendix 26.1 LVIA Annexes**. Where intervening vegetation, landform and/or development screen visibility of the substation entirely, no photomontage is provided.

Consultee	Date/ Document	Comment	Project Response
			Wireframes and photomontages are verified and accord with industry standards.
		ID 6.1.9. The ES should identify any vegetation clearance that will be required for the Proposed Development. *The assessment of effects should take into account the time taken for any proposed reinstatement or mitigation planting to establish and mature.*	Onshore Cable Corridor Potential vegetation clearance and time for reinstatement planting to mature has been considered in **Section 26.6**. Onshore Substation Potential vegetation clearance at the onshore substation site is considered in **Section 26.6**. Indicative landscape proposals including mitigation planting have been prepared for the substation and have been accounted for within the LVIA. An accompanying **Outline Landscape Management Plan (OLMP)** (document reference 9.18), including indicative landscape proposals, has been submitted as part of the DCO submission.
		ID 6.1.10. The ES should describe any lighting that would be in place throughout the lifetime of the Proposed Development and assess any likely significant effects from light pollution, including on local amenity receptors.	The LVIA has accounted for the potential effects of lighting at night upon landscape and visual receptors that might occur throughout its assessment, as set out in **Section 26.4.6.2**.
ETG Meetings			
Natural England South Norfolk and Broadland District Council North Norfolk District Council	23 March 2020 Landscape/Seascape ETG meeting	ETG agreed the following approach to visuals: Visuals will be produced from agreed representative viewpoints, in accordance with: • Landscape Institute Technical Guidance Note 06/19 Visual Representation of Development Proposals, September 2019. • Visual Representation of Wind Farms Version 2.2, Scottish Natural Heritage, February 2017.	Wireframes following this approach are presented in **Appendix 26.1 LVIA Annexes**. Photomontages of the onshore substation have been prepared from all viewpoints where visibility of the substation's components would be possible. Where intervening vegetation, landform and/or development screen visibility of the substation entirely, no photomontage is provided.

Consultee	Date/ Document	Comment	Project Response
Norwich City Council		Wireframes for impact assessment will present the 'worst-case' in accordance with the Rochdale Envelope approach. E.g. they will show the maximum outline development envelope. Illustrative photomontages showing potential scheme during operation will also be produced.	• Wireframes and photomontages prepared to support this chapter have been produced in accordance with the following guidance documents: Landscape Institute Technical Guidance Note 06/19 Visual Representation of Development Proposals, September 2019. • Visual Representation of Wind Farms Version 2.2, Scottish Natural Heritage, February 2017.
		ETG agreed with the following list of data sources: • National Landscape Character Area Profiles • North Norfolk Landscape Character Assessment DRAFT Supplementary Planning Document 2018 • North Norfolk Landscape Sensitivity Assessment DRAFT Supplementary Planning Document 2018 • Broadland District Landscape Character Assessment 2008 (updated 2013) • South Norfolk District Landscape Character Assessment 2001 (updated 2006 and 2008) • South Norfolk District Landscape Designations Review 2012 • Norfolk Coast Area of Outstanding Natural Beauty Management Plan Strategy 2014-2019. • Norfolk Coast Area of Outstanding Natural Beauty Integrated Landscape Guidance.	These have been reviewed and, where relevant, referred to in this chapter. Since the submission of the PEIR, new versions of some data sources have been published. These are as follows: • The North Norfolk Landscape Character Assessment Supplementary Planning Document (SPD) DRAFT 2018 has been replaced by the North Norfolk Landscape Character Assessment SPD (Jan 2021), adopted by North Norfolk District Council (NNDC) on 1 February 2021. These more recent documents are used as the data sources in this chapter.
		The ETG agreed that the North Norfolk, Broadland and South Norfolk district landscape character assessments should be used as the baseline for assessing landscape effects, informed by other reports and assessments.	These landscape character assessments are used as the landscape baseline in this chapter, informed by other relevant reports and assessments.

Consultee	Date/ Document	Comment	Project Response
		The ETG agreed with the following list of visual receptors for assessing visual effects: • Settlements • Public Rights of Way • Beach/coastal margin and other accessible landscapes • Key routes road and rail • Key routes recreational (long distance walking routes, cycle routes) • Specific viewpoints	Effects on these visual receptors are assessed in **Section 26.6**.
		ETG agreed with the following list of landscape designations and areas, or features protected by policy for consideration with regard to onshore landscape and visual impact assessment. • Norfolk Coast Area of Outstanding Natural Beauty (AONB). • Rural River Valleys and Valley Urban Fringe landscape character types (South Norfolk Local Plan DMPD Policy DM 4.5). • Norwich Southern Bypass Landscape Protection Zone (NSBLPZ), Key Viewing Cones and Undeveloped Approaches to Norwich (South Norfolk Local Plan DMPD Policy DM 4.6).	These are considered in this chapter and, where there is potential for effects to occur, these are assessed. Since this consultation the onshore cable corridor has been refined and the North Norfolk Heritage Coast (NNHC) now lies within the 1km study area of the onshore cable corridor, at the landfall. Heritage Coasts are 'defined' and not 'designated' as explained in **Section 26.5.6**. Effects on the NNHC are assessed in this chapter. In the Section 42 consultation South Norfolk Council and BDC advised *"Policy DM4.5 of the South Norfolk Development Management Document does not protect the river valley landscape character per se, it is a general landscape character policy that requires particular regard for the rural river valleys; DM4.5 applies for all landscape character in South Norfolk*." This information has been incorporated into the assessment and addressed in more detail in **Section 26.5** where relevant.

Consultee	Date/ Document	Comment	Project Response
		The ETG agreed that SNDC and Norwich City Council will be consulted to agree representative viewpoints for the onshore substation.	South Norfolk District Council (SNDC) and Norwich City Council (NorCC) have been consulted and the representative viewpoints are agreed for the onshore substation, as described in this table below.
		The ETG agreed with the following list of potential impacts with regard to onshore cable corridor including landfall. • Temporary effects during construction. • No significant effects during decommissioning. • Effects due to removal and re-instatement of hedgerows and trees. • Effects during the first few years of operation as re-instated vegetation matures. (Noting that Planning Inspectorate for England and Wales (PINS) scoping opinion states that that visual effects from the onshore cable route (including the landfall) during operation are unlikely to be significant and can be scoped out of the assessment, but that landscape effects should be assessed (while planting matures)).	These potential impacts are addressed in **Section 26.6**.
		The ETG agreed with the following list of potential impacts with regard to the onshore substation. • Temporary effects during construction and decommissioning. • Long-term effects during operation, factoring in time taken for mitigation planting to mature. • Effects on landscape character. • Effects on visual receptors.	These potential impacts are addressed in **Section 26.6**.

Consultee	Date/ Document	Comment	Project Response
		• Effects on areas or features protected by local policy.	
		ETG agreed with the approach to the assessment of effects on residential visual amenity as the following summary: • Will be assessed for onshore substation only. • Assess to identify whether the substation would be sufficiently "oppressive" or "overbearing" that the residential property would be rendered an unattractive place in which to live (consistent with Landscape Institute Technical Guidance Note 2/19, Residential Visual Amenity Assessment (RVAA) 15 March 2019). (Landscape Institute 2019)	Effects on residential visual amenity are addressed in **Section 26.4**.
		ETG agreed with the following approach to the assessment of effects on the Qualities of Natural Beauty of the AONB within the LVIA. • The LVIA will assess effects on the Qualities of Natural Beauty of the Norfolk Coast AONB that are relevant to seascape, landscape and visual.	This has been assessed in **Section 26.6**.
		Photography for the visuals for the PEIR would need to be taken in summer 2020 to ensure that the programme for PEIR submission is met. The ETG requested that winter photography is also taken and presented in the visuals within the LVIA chapter of the ES for the DCO submission.	The visualisations supporting the PEIR chapter showed photography taken in summer 2020. The visualisations presented in this chapter of the ES for the DCO submission show photography taken in winter 2021.
		The ETG agreed with the presented approach to the tree and hedgerow assessment, but that further detail has yet to be defined by Equinor on matters such as	A preliminary 200m wide cable corridor was assessed for the PEIR. For the ES, a narrower cable corridor

Consultee	Date/ Document	Comment	Project Response
		replacement and 'no net loss' for trees that may need to be removed.	(which is typically 60m) has been assessed – further details are set out in **Section 26.3.2.1.1**. In relation tree and hedgerow assessment, the following has been undertaken: • An assessment of hedgerows identified as 'important' in accordance with Hedgerows Regulations 1997 has also been undertaken and submitted as part of the DCO application. • The value of hedgerows, trees and woodlands in the landscape has been considered in informing impact assessment in **Section 26.6**. • A detailed desk-based approach to assessing trees using aerial photography, in addition to Phase One Habitat Survey data and Tree Preservation Order Data. • Arboricultural surveys were undertaken at key locations, i.e. in proximity to the substation and within the AONB, and is presented in the **Appendix 20.15 Arboricultural Report**. This document: • Summarises the relevant legislation and national and local policies that relate to the protection of trees, hedgerows and woodlands; • Provides the results of the desk study within the entire DCO Order Limits; • Provides the results of the arboricultural surveys within the North Norfolk AONB and Norwich substation areas, which have been used to inform proposals;

Consultee	Date/ Document	Comment	Project Response
			• Advises on how arboricultural impacts can be avoided through sensitive detailed design and best practice construction methods; and • Advises, where potential impacts cannot be avoided, on how mitigation and compensation could be provided in addition to any legislative barriers to tree work.
Natural England Norfolk County Council North Norfolk District Council Norwich City Council	21 July 2021 Landscape/Seascape ETG meeting No. 2	The attendees at this ETG agreed with the LVIA's approach for the PEIR, and this approach should be continued for the ES. They confirmed their continued agreement to the following: • the methodological approach to the LVIA; • the data sources (i.e. character assessment, SPDs and Management Plans) used for the LVIA; • the landscape character areas/types identified and assessed in the LVIA; • the visual receptors for identified and assessed in the LVIA; • the designated landscapes for identified and assessed in the LVIA; • the list of potential impacts assessed with regards to the onshore cable corridor (including landfall) and onshore substation; • the approach to the assessment of effects on residential visual amenity; • the approach to the assessment of effects on the Special Qualities of the AONB within the LVIA; and, • the proposed approach to the visualisations.	The LVIA presented in this chapter has remained consistent to the approach presented in the PEIR chapter. The assessment in **Section 26.6** has been updated to assess the proposals submitted for the DCO application. Since the submission of the PEIR, new versions of some data sources have been published as follows: • The North Norfolk Landscape Character Assessment SPD DRAFT 2018 has been replaced by the North Norfolk Landscape Character Assessment SPD (Jan 2021), adopted by NNDC on 1 February 2021. This more recent document is used as a data source in this chapter.

Consultee	Date/ Document	Comment	Project Response
		The members at this ETG agreed that an Outline Landscape and Ecological Management Plan (OLEMP) would be submitted as part of the DCO application, and that landscape proposals would aim to minimise potential visual effects as far as possible and create new opportunities for ecological enhancements.	An **OLMP** (document reference 9.18) and a separate **Outline Ecological Management Plan** (OEMP) (document reference 9.19) are submitted as part of the DCO application. The **OLMP** (document reference 9.18) sets out landscape proposals to minimise potential landscape and visual effects and create new opportunities for ecological enhancements. The **OEMP** (document reference 9.19) sets out the required ecological mitigation and enhancement measures identified as part of the ecological impact assessment.
		A10-year replacement period for trees, hedgerows and other vegetation requested by the ETG.	New tree, hedgerow and shrub planting will be maintained and, if any fail replaced for ten years following implementation of planting, as set out in the **OLMP** (document reference 9.18) and agreed with stakeholders.
South Norfolk Council and Broadland District Council	28 July 2021 Landscape/Seascape ETG meeting No. 2	South Norfolk Council (SNDC) and Broadland District Council (BDC) agreed with the following, as set out in the PEIR Chapter 28, and should be used again for the ES Chapter: • The methodological approach to the LVIA; • the data sources (i.e., character assessment, SPDs and Management Plans) used for the LVIA; • the landscape character areas/types identified and assessed in the LVIA; • the visual receptors identified and assessed in the LVIA; • the designated landscapes identified and assessed in the LVIA; • the list of potential impacts assessed for the onshore developments in the LVIA.	The assessment in this chapter follows the method, and refers to the data sources, receptors and potential impacts referred to in the PEIR chapter, save where newer versions of documents have been published since the PEIR submission.

Consultee	Date/ Document	Comment	Project Response
		SNDC and BDC acknowledged that no formal comments on representative viewpoint locations for the substation prior to the PEIR submission were returned following Equinor's request on 8 September 2020 and 24 November 2020. SNDC/BDC agreed night-time photomontages of the substation would not be required; although SNDC/BDC noted the expectation of the potential effects of lighting to be considered in the LVIA at ES.	It was agreed that the viewpoint information presented at the PEIR (and subsequently taken forward to ES) would cover what is necessary to produce a robust assessment for the DCO application. No further photography has been undertaken since winter 2021. The LVIA has accounted for the potential effects of lighting at night, as set out in **Section 26.4.6.2.**
Natural England Norfolk County Council North Norfolk District Council South Norfolk Council and Broadland District Council	8 February 2022 Landscape/Seascape ETG meeting No. 3	The ETG agreed that a biodiversity net gain (BNG) plan, which details biodiversity opportunities at Weybourne Woods, should be produced. NE requested this is shared with them for information. This BNG Plan is to be provided by Wild Frontier Ecology.	A BNG Strategy is presented in **Appendix 9.19.2 Outline Biodiversity Net Gain (BNG) Strategy** (document reference 9.19.2).
		The ETG agreed that Norfolk Coast Area of Outstanding Natural Beauty Management Plan Strategy 2014-2019 should be used to inform the LVIA, due to the prematurely published Norfolk Coast Area of Outstanding Natural Beauty Five Year Strategy 2019-2024.	The Norfolk Coast Area of Outstanding natural Beauty Management Plan Strategy 2014-2019. This document has been reviewed and, where relevant, referred to in this chapter.
		The ETG requested that a review was undertaken of the cable corridor's routes in relation to Mossy Mere Wood (close to Saxthorpe) due to its sensitivity. Concerns were raised by the ETG that a full arboricultural survey would not be carried out until post-consent and considers that the information is needed earlier to inform the Examiners decision. Equinor agreed to review approach to tree survey.	This matter falls outside of the scope of the LVIA and is addressed in **Appendix 20.15 Arboricultural Report**, where the following has been undertaken: • A detailed desk-based approach to assessing trees using aerial photography, in addition to Phase One Habitat Survey data and Tree Preservation Order Data. • Arboricultural surveys were undertaken at key locations, i.e. in proximity to the substation and

Consultee	Date/ Document	Comment	Project Response
			within the AONB, and is presented in **Appendix 20.15 Arboricultural Report**. This document: • Summarises the relevant legislation and national and local policies that relate to the protection of trees, hedgerows and woodlands; • Provides the results of the desk study within the entire DCO Order Limits; • Provides the results of the arboricultural surveys within the North Norfolk AONB and Norwich substation areas, which have been used to inform proposals; • Advises on how arboricultural impacts can be avoided through sensitive detailed design and best practice construction methods; and • Advises where potential impacts cannot be avoided, on how mitigation and compensation could be provided in addition to any legislative barriers to tree work.
		The ETG agreed with the proposed approach to how Equinor will demonstrate, in the DCO application, how the project has been guided by overarching design principles/objectives, and will deliver a project that is in accordance with good practice (including safety), and demonstrates Good Design	This is set out in the **Project Vision** (document reference 9.27) and **Design and Access Statement** (**DAS**) (document reference 9.3)
		The ETG confirmed that the landscape proposals, related to the landscape management of the onshore cable corridor and the onshore substation, were broadly acceptable and responded well to the local landscape and its existing framework. Equinor confirmed its commitment to the following:	The **OLMP** (document reference 9.18) and a separate **OEMP** (document reference 9.19) submitted as part of the DCO application and set out how the landscape and ecology proposals would be managed during the operational phase. The **DAS** (document reference 9.3) sets out the design principles for the proposed

Consultee	Date/ Document	Comment	Project Response
		• Maintaining planting along the onshore cable corridor for the first 10 years following implementation, before being handed over to landowner. • Planting and habitat creation around the onshore substation would be managed for the operational life of SEP and DEP.	landscape along the onshore cable corridor and around the onshore substation. The **OLMP** (document reference 9.18) sets out landscape proposals to minimise landscape and visual effects and create new opportunities for ecological enhancements. The **OEMP** (document reference 9.19) sets out the required ecological mitigation and enhancement measures identified as part of the ecological impact assessment.
Norfolk Coast Partnership	8 March 2022 Meeting	The meeting welcomed and agreed to the presentation of the assessments of the Norfolk Coast AONB from all relevant topics in a separate document. Status of 2014 plan to be confirmed AONB confirmed that the Heritage Coast interests are covered by the County Heritage team, being essentially a Heritage matter	It was confirmed by the Norfolk Coast Partnership (via email on 23 February 2022) that the 'Norfolk Coast Area of Outstanding Natural Beauty Five Year Strategy 2019-2024' remains the current management plan for the Norfolk Coast AONB and is used to inform this chapter.
		Equinor agreed to provide copies of the following documents: • Outline CSIMP • OTNR Review- guide to communities • Equinor FAQ • PEIR site selection and alternatives chapters	These were received post-meeting.
		The meeting agreed with the proposed approach to how Equinor will demonstrate, in the DCO application, how the project has been guided by overarching design principles/objectives, and will deliver a project that is in accordance with good practice (including safety), and demonstrates Good Design	This is set out in the **Project Vision** (document refer**ence** 9.27) and **DAS** (document reference 9.3)

Consultee	Date/ Document	Comment	Project Response
		The meeting requested further information regarding the extent of HDD under the AONB and cable depths.	This was all provided after the meeting, with Equinor confirming that it was not necessary, appropriate or justifiable to use trenchless methods to cross the entire AONB.
		The meeting agreed that a biodiversity net gain (BNG) plan, which details biodiversity opportunities at Weybourne Woods and more generally, should be produced. Carbon sequestration to be considered	A BNG Strategy is presented in **Appendix 9.19.2 Outline BNG Strategy** of the **OEMP** (document reference 9.19).
		The meeting agreed that it was not necessary to meet again prior to the submission of the DCO, unless any material comments were recorded following a briefing at the CMG of the Norfolk Coast Partnership.	AONB confirmed nothing was raised at the CMG, other than the need for all stakeholders to keep talking and work together as much as possible to add value to existing schemes and contribute to nature recovery where possible.
LVIA Consultation on study areas, representative viewpoints and visualisations			
Norfolk County Council Norwich City Council South Norfolk District Council	8 Sept 2020. Email consulting on LVIA: 1. study areas of 4km from the onshore substation Sites. 2. study area of 1km from the final cable corridor. 3. representative viewpoints for the onshore substation Sites. 4. visualisations to be produced for the PEIR and ES stages	Equinor proposed the following approach to visuals: PEIR stage Wireframes showing the existing view (baseline panoramic photograph) and a wireframe overlaid over a baseline panoramic photograph showing proposed substation during its operational phase. Substations presented as wirelines showing the maximum potential development areas (e.g. the full potential footprint of each site and the maximum potential heights of buildings and external equipment across the full extent of each site). Photomontages will not be produced at PEIR stage. ES stage Wireframes and photomontages (daytime views) of the final selected substation location will be produced from representative viewpoints. Further photography will be taken in winter 2020/2021 while deciduous	The proposed study areas for the onshore development of SEP and DEP have been agreed with all of the consultees who responded on this matter and are used in this chapter. Wirelines have been provided for the ES (as they were for the PEIR), including from Marston Marshes (see **Figures 26.17** to **26.25**). The exact location of some viewpoints has been moved slightly from that consulted on, to use the best locations identified when undertaking detailed site work. Photomontages of the onshore substation have been prepared from all viewpoints where visibility of the substation's components would be possible. Where intervening vegetation, landform and/or development screen visibility of the substation entirely, no photomontage is provided.

Consultee	Date/ Document	Comment	Project Response
		trees are not in leaf and used in the wireframes and photomontages for the ES. Night-time photomontages will not be produced. Consultee responses Norfolk County Council agreed to the proposals with no further comments. NorCC agreed with proposed study areas and approach to the visualisations, and request one additional viewpoint from Marston Marshes. SNDC advised by phone to refer to the previous LVIA undertaken for the Hornsea 3 Substation in determining these matters. No written response has been received from SNDC.	The wireframes and photomontages are verified and accord with industry standards and use winter photography taken in early 2021.
North Norfolk District Council South Norfolk District Council/Broadland District Council Natural England Norfolk Coast Partnership	24 Nov 2020. Email consulting on LVIA study area of 1km from the final cable corridor.	Norfolk Coast Partnership and NNDC stated that they had no comments. SNDC/BDC and Natural England agreed with the study area.	A 1km study area from the Order Limits boundary is used in this chapter.
Section 42 Responses			
Norfolk Coast Partnership	Summary of Section 42 commentary	*Onshore construction compounds* *"Woodforde Farm unsuitable – too far from route and substandard access."*	Woodforde Farm has not been taken forward as the main construction compound location.

Consultee	Date/ Document	Comment	Project Response
	received of relevance to the LVIA	*Landfall* *"We are very concerned about the visual impact and physical disturbance in the AONB During and after construction. This is a sensitive area in terms of biodiversity and landscape. There could be adverse knock on effects for farmers, fishermen, tourism, local people and visitors, sensitive species, adverse visual impact from movement, traffic and lighting. As a nationally designated landscape we would have preferred Bacton and difficult to see how impact can be mitigated here."*	Potential effects on landscape and visual receptors at the landfall are assessed in **Section 26.6.2**.
		Onshore Substation Access *"Please utilise the Norfolk Biodiversity Information Service to conduct searches on species and also refer to the Green Infrastructure Strategy. Is there a plan to mitigate impact or a potential community project which could be funded to provide access/biodiversity enhancement"*	These services are not relevant to the purposes of the LVIA but have been considered (where relevant) within the **OLMP** and **OEMP** (document reference 9.18 and 9.19). The **OLMP** presents the key landscape principles and proposals to minimise impacts and provide screening. These landscape proposals form part of the embedded mitigation measures that are considered in the assessment of effects in **Section 26.6**.
Norfolk County Council	Summary of Section 42 commentary received of relevance to the LVIA	*"…we would expect to see phased and layered planting around the substation sites to afford long distance screening in the landscape without creating block planting that will not appear congruent with the landscape. As well as losses minimised where possible and suitable mitigation proposed, we would support a "no net loss" approach. "*	The **OLMP** (document reference 9.18) presents the key landscape principles and proposals to minimise impacts and provide screening. These landscape proposals form part of the embedded mitigation measures that are considered in the assessment of effects in **Section 26.6**.

Consultee	Date/ Document	Comment	Project Response
		"We have concerns regarding the cumulative impacts on the landscape to the North West and West of Norwich where several proposals (albeit at different stages) are currently in discussion or in the planning system."	Cumulative impacts area assessed in **Section 26.7**.
North Norfolk District Council	Summary of Section 42 commentary received of relevance to the LVIA	*"NNDC would wish to work with Equinor in seeking to ensure the minimum amount of tree, hedge and shrub loss to facilitate the project. NNDC will also insist on a ten-year replacement period for trees, shrubs and hedgerows within North Norfolk which would need to be secured within any DCO consent. In respect of hedgerow and tree removal, retention, replacement and management NNDC would wish to work with Equinor in the production of the Outline Landscape and Ecological Management Strategy (OLEMS) to be submitted with the DCO."*	The **OLMP** and **OEMP** (document reference 9.18 and 9.19) presents how the SEP and/or DEP projects would minimise tree, hedge and shrub loss. New tree, hedgerow and shrub planting will be maintained and, if any fail, replaced for ten years following implementation of planting, as set out in the **OLMP** (document reference 9.18).
South Norfolk & Broadlands District Council	Summary of Section 42 commentary received of relevance to the LVIA	*"…an assessment of the effects of any lighting should be undertaken"*	The LVIA has taken into account the potential effects of lighting at night, as set out in **Section 26.4.6.2**.
		"Policy DM4.5 of the South Norfolk Development Management Document does not protect the river valley landscape character per se, it is a general landscape character policy that requires particular regard for the rural river valleys; DM4.5 applies for all landscape character in South Norfolk."	This has been accounted for in **Sections 26.5** and **26.6** accordingly.
		"Land north of the Street Cawston has now been the subject of a planning application for a solar farm (ref: 20201776) which has been refused"	This has been noted. A review of the application's status on Broadlands District Council's website confirms that this application has been consented. As such, in accordance with the LVIA's methodology, the consented scheme is treated as part of the baseline environment.
		"We will expect full tree survey information to be provided as part of the DCO submission and, where	The **OLMP** (document reference 9.18), submitted as part of the DCO application, presents further design

Consultee	Date/ Document	Comment	Project Response
		there is likely to be conflict with the proposed developments"	work and survey post-PEIR and sets out key landscape principles and proposals. Surveys undertaken include: • An assessment of hedges identified as 'important' in accordance with Hedgerows Regulations 1997 has been undertaken and submitted as part of the DCO application. • A detailed desk-based approach to assessing trees using aerial photography, in addition to Phase One Habitat Survey data and Tree Preservation Order Data. • Arboricultural surveys were undertaken at key locations, i.e. in proximity to the substation and within the AONB, and is presented in **Appendix 20.15 Arboricultural Report**. This document: • Summarises the relevant legislation and national and local policies that relate to the protection of trees, hedgerows and woodlands; • Provides the results of the desk study within the entire DCO Order Limits; • Provides the results of the arboricultural surveys within the North Norfolk AONB and Norwich substation areas, which have been used to inform proposals; • Advises on how arboricultural impacts can be avoided through sensitive detailed design and best practice construction methods; and • Advises, where potential impacts cannot be avoided, on how mitigation and compensation
		"A full hedgerow assessment has not been undertaken yet. An assessment of hedges identified as "important" in accordance with the Hedgerow Regulations 1997 [sic] will be submitted with the DCO."	
		"The ability of landowners to veto replacement planting is potentially an issue."	

Consultee	Date/ Document	Comment	Project Response
			could be provided in addition to any legislative barriers to tree work. Mitigation (replanting) will be secured by the Requirements in the DCO through the relevant management plans that will be submitted to and approved by the local planning authority. Where rights or land are acquired permanently under the DCO, this will extend to control over planting/mitigation where that has been specified in the Book of Reference. It is also possible to enter onto land to carry out mitigation works (including replacement planting) by relying on the temporary possession powers included in the DCO. The temporary possession powers make specific provision for carrying out mitigation works and for those mitigation works to remain on the land after the period of temporary possession ends.

26.3 Scope

26.3.1 Study Area

12. The study areas for onshore development have been agreed with the relevant planning authorities and consultees as set out in **Table 26-1** as being appropriate to cover all potentially material landscape and visual significant impacts and have been informed by the extent of ZTV studies, professional judgement and fieldwork.
13. The extents of these study areas are summarised below and illustrated on **Figures 26.1** to **26.6**.

26.3.1.1 Onshore Cable Corridor

14. A 1km study area from the DCO Order Limits (which defines the extent of the onshore cable corridor) has been agreed, see **Figures 26.1** to **26.6**.
15. Fieldwork has identified that the propensity of vegetation, including hedgerows, trees, woodlands and scrub, within the landscape crossed by the cable corridor, combined with other features such as buildings, and in some cases topography, mean that views of the construction works would reduce rapidly with distance from the cable corridor. The scale of impacts would vary depending on the exact nature of views available, although beyond approximately 100 – 300m views of construction works would generally be limited or obscured. If views are possible beyond this distance, the potential for landscape or visual effects would be very limited. Therefore, a 1km study area is considered to be conservative.

26.3.1.2 Onshore Substation

16. The ZTV study for the onshore substation (shown on **Figure 26.15**) indicates that the proposed development would theoretically be visible from extensive areas within its study area, becoming more limited beyond approximately 4km.
17. However, in reality, the actual visibility of the onshore substation experienced by people would be influenced substantially by features (such as vegetation, landform and buildings) within the intervening landscape, which are of a smaller scale than the main woodlands, settlements and landform modelled on the ZTV. Fieldwork has identified that the visibility of the onshore substation would be substantially less than the extent of the theoretical visibility generated by the computer model, and effects beyond 4km are unlikely to occur.
18. Therefore, landscape and visual receptors are scoped out beyond 4km from the onshore substation. The 4km study area has been agreed to inform the LVIA, as shown on **Figure 26.6**.

26.3.2 Realistic Worst-Case Scenario

26.3.2.1 General Approach

19. The final design of SEP and DEP will be confirmed through detailed engineering design studies that will be undertaken post-consent to enable the commencement of construction. In order to provide a precautionary but robust impact assessment at this stage of the development process, realistic worst-case scenarios (RWCS)

have been defined in terms of the potential effects that may arise. This approach to EIA, referred to as the Rochdale Envelope, is common practice for developments of this nature, as set out in Planning Inspectorate Advice Note Nine: Rochdale Envelope (v3, 2018). The Rochdale Envelope for a project outlines the RWCS for each individual impact, so that it can be safely assumed that all lesser options will have less impact. Further details are provided in **Chapter 5 EIA Methodology**.

20. The parameters of both SEP and DEP are described in **Chapter 4 Project Description**, which sets out the key details of the specific activities and their durations. Consideration has also been given to how SEP and/or DEP would be built out as described in **Sections 26.3.2.2** to **26.3.2.4**. This accounts for the fact that whilst SEP and DEP are the subject of one DCO application, it is possible that either one or both of the projects will be developed, and if both are developed, that construction may be undertaken either concurrently or sequentially.

21. The RWCSs for the LVIA are summarised in **Table 26-2**. The table presents the parameters (as described in **Chapter 4 Project Description**) that would result in the greatest potential effects on landscape and visual receptors.

22. The LVIA's approach is based on the maximum parameters, which would occur as a result of the maximum land-take; the longest durations of construction, operation, and decommissioning; and the maximum height/size of development. Should smaller, shorter and/or lower parameters apply, landscape and visual receptors could be affected to a lesser degree.

26.3.2.1.1 Onshore Cable Corridor

23. The greatest potential effects arising as a result of the onshore cable corridor would be experienced during the construction phase of SEP and/or DEP even though this period would be temporary in nature and of shorter duration than the operational phase. However, during this period, the visible nature of the construction activity would be experienced to a greater degree than the buried cable that would operate during the subsequent phase of SEP and DEP.

24. The onshore cables would be installed by open-cut trenching, except at locations where Horizontal Direct Drilling (HDD) or alternative trenchless techniques are used to cross selected features. It will be installed in sections of up to 1km at a time, with a typical construction presence within each section as follows:

- Open-cut trenching: up to four weeks for all construction scenarios.
- HDD or alternative trenchless techniques: up to seven weeks for a single project (SEP or DEP); up to twelve weeks for SEP and DEP if built concurrently; and up to seven weeks per project if SEP and DEP are built sequentially.

25. Typical construction works to install the cables could involve the following:

- **Enabling Works**
    - Site compound establishment (main and secondary compounds).
    - Ecological/environmental protection works.
    - Construction of site access bellmouths.

- Installation of guardian ‘GS6’ goalposts; signage; demarcation and fencing for overhead line crossing points; fencing for easement and Public Right of Ways (PRoW); and traffic management signage.
- Installation of pre-construction drainage.
- Utility trial holes, route setting out.
- Archaeological works.
- Hedgerow and vegetation removal.
- Topsoil strip and storage
- Subsoil excavation and storage
- Construction of access roads; ditch flume crossings; temporary bridges (if required); crane pads (where required); and protection slabs for utility crossing points.

- **Civils Works** – this could involve multiple construction teams working on different parts of the cable corridor section simultaneously. The main activities would involve:
  - Trenchless crossings
  - Trench excavation, duct installation and backfill
  - Joint bay construction
  - Duct proving (CCTV, swabbing, mandrelling etc.)
- **Cable Installation Works** – The cable delivery strategy would be aligned with civils and enabling works programs to maximise efficiencies. It is common for multiple cable pulling and jointing teams to be working at any one time. The main activities would involve:
  - Cable deliveries, inspection, sheath testing and storage
  - High Voltage Alternating Current (HVAC) and fibre optic cable (FOC) installation
  - Cable jointing and FOC splicing
  - Reinstatement of joint bays
  - Cable testing
- **Reinstatement/Demobilisation** – once the cable section is fully installed, jointed, inspected and tested; backfilling of the joint bays will be undertaken. If none of the enabling works (haul road, access bellmouths etc.) are required for access in the cable section, reinstatement can be undertaken. Subsequent activities will therefore involve:
  - Removal of haul road, ditch flumes and temporary bridges
  - Installation of post-construction drainage
  - Reinstatement of topsoil

- Removal of fencing
- Site access bellmouth removal
- Site compound demobilisation

26. During operation the cables would be buried. Link boxes (approximately one every 1km along the onshore cable corridor) would be buried to ground level with a secured access panel visible on the ground surface with an above ground maker post.

27. During decommissioning the cables would be removed without the need to re-excavate the onshore cable corridor trenches, and link boxes would be removed and ground reinstated, and effects would be short-term and very limited.

28. To support the construction of the onshore cables, a main compound area will be in operation for the duration of the construction works, located adjacent to the A1067 (Fakenham Road) near Attlebridge and comprises the following components: site security; offices and welfare facilities; parking; cable drums storage area; Concrete Batching Systems (CBS) batching; outside storage (ducting, etc.); plant warehouse; jointing warehouse; and general stores.

29. As stated above, the greatest potential effects arising as a result of the onshore cable corridor would be experienced during the construction phase of SEP and/or DEP, which would include the construction and operation of the main compound as part of its enabling works. It is assessed as such as part of the assessment of the onshore cable corridor in **Section 26.6**. During the operation and decommissioning phase, the main compound will have been removed and the landscape reinstated, and therefore, no effects would occur.

30. Therefore, the LVIA describes in **Section 26.6** the potential effects that would arise during the construction phase, which represents the RWCS for the onshore cable corridor and landfall site. Consideration will also be given to the longer-term effects of the proposed vegetation removal and reinstatement. This is in accordance with the agreements reached during consultation (see **Section 26.2**).

31. This RWCS is summarised in **Table 26-2**, only describing the relevant details in relation to the construction of the onshore cable corridor.

26.3.2.1.2 Onshore Substation

32. The greatest potential effects arising as a result of the onshore substation would occur during the operational phase of SEP and/or DEP. The construction and decommissioning phases would be shorter in duration and temporary in nature compared to the operational phase and would affect receptors to a lesser degree. Therefore, in order to keep this chapter proportionate, the LVIA only describes in detail potential effects arising from the operation of onshore substation in **Section 26.6**. A summary of the potential effects that would arise as a consequence of the construction and decommissioning phases are set out in **Appendix 26.1 LVIA Annexes**.

26.3.2.2 Construction Scenarios

33. In the event that both SEP and DEP are built, the following principles set out the framework for how SEP and DEP may be constructed:

- SEP and DEP may be constructed at the same time, or at different times;
- If built at the same time both SEP and DEP could be constructed in four years;
- If built at different times, either Project could be built first;
- If built at different times, each Project would require a four year period of construction;
- If built at different times, the offset between the start of construction of the first Project, and the start of construction of the second Project may vary from two to four years;
- Taking the above into account, the total maximum period during which construction could take place is eight years for both Projects; and
- The earliest construction start date is 2025.

26.3.2.3 Operation Scenarios

34. Operation scenarios are described in detail in **Chapter 4 Project Description**. Where necessary, the assessment considers the following three scenarios:
    - Only SEP in operation;
    - Only DEP in operation; and
    - The two Projects operating at the same time, with a gap of two to four years between each Project commencing operation.

35. The operational lifetime of each Project is expected to be 40 years. However, the onshore substation could be in place for up to 44 years if SEP and DEP are built sequentially, which would account for the gap between the commencement of operation (a maximum of four years) of the two Projects, after which the substation would be removed, and the site reinstated at the end of the life of the second Project.

36. In light of the various operation scenarios set out above, should either SEP or DEP operate in isolation or together, it has been assessed that there would be little to no material difference in the greatest potential effects on landscape and visual receptors that could arise as a result of the onshore substation.

37. Therefore, the LVIA assesses the RWCS as set out in **Table 26-2**, and focuses on the greatest possible effects on landscape and visual receptors that might arise as a result of the onshore substation.

26.3.2.4 Decommissioning Scenarios

38. Decommissioning scenarios are described in detail in **Chapter 4 Project Description**. Decommissioning arrangements for the onshore elements of SEP and DEP will be agreed through the submission of an onshore decommissioning programme to the relevant planning authority for approval within six months of the permanent cessation of commercial operation (unless otherwise agreed in writing by the relevant planning authority), however for the purpose of this assessment it is assumed that decommissioning of SEP and DEP could be conducted separately, or at the same time. Mitigation Embedded in the Design.

Table 26-2: Realistic Worst-Case Scenarios

Impact	SEP or DEP in Isolation	SEP and DEP Concurrently	SEP and DEP Sequentially	Notes and Rationale
Construction				
Potential impacts on landscape and visual resources Temporary impacts of construction works for the onshore cable corridor and landfall site may affect designated and non-designated landscape resources. Temporary impact of construction works for the onshore cable corridor and landfall site may affect visual receptors and amenity. Some longer-term impacts may occur due to vegetation removal.	**Landfall**			
	• Transition joint bays: Number: 1, Dimensions: 26m (L) x 10m (W) x up to 3m (D) • HDD compound area: 75m x 75m • Total works area: 48,955.1m^2. • Duration of works: Landfall HDD: 4 months, Landfall cable pull: 2 months.	• Transition joint bays: Number: 2, Dimensions: 26m (L) x 10m (W) x up to 3m (D) if adjacent to each other; or 26m (L) x 12m (W) if combined • HDD compound area: 75m x 75m • Total works area: 48,955.1 m^2. • Duration of works: Landfall HDD: 5 months, Landfall cable pull: 4 months.	• Transition joint bays: Number: 2, Dimensions: (adjacent to each other) 26m (L) x 10m (W) x up to 3m (D) • HDD compound area: 75m x 75m (per project and overlapping). • Total works area: 48,955.1m^2. • Duration of works: Landfall HDD: 4 months, Landfall cable pull: 2 months (per project).	The maximum land-take and duration as a result of the temporary construction works required for the landfall is assessed to be the RWCS, which in this case is the sequential construction of SEP and DEP. It assumes the maximum possible gap between the start of construction of SEP and DEP (four years), which would result in a total construction of up to eight years. This would result in the longest and maximum potential impact that may affect designated and non-designated landscape resources; visual receptors; and amenity.
	Onshore Cable Corridor			
	• Construction corridor: Length: 60km, Width: 45m (100m at trenchless crossings). • Approximate working easement: 27m • Main construction compound: Number: 1, Area: 30,000m^2. • Secondary construction compounds (with CBS Batching): Number: 2, Area 7,500m^2. • Secondary construction compounds (without CBS Batching): Number: 6, Area 2,500m^2. • Trenchless crossing compounds: Area: 1,500m^2 – 4,500m^2. • Total works area (incl. compounds and accesses): 4566250.6m^2. • Cable trench: Number: 1, Width at base: 0.85m, Width at surface: 3m, Depth: 2m. • Haul road: Number :1, Length: 55km, Width: 5m (8m at passing places), Total area: 315,640m^2. • Jointing bays: Typical frequency: Every 1000m, Approximate number: 60, Dimensions: 16m (L) x 3.5m (W) x 2m (D). • Link boxes: Typical frequency: Every 1000m, Approximate number: 60, Dimensions: 2.6m (L) x 2m (W) x 1.5m (D). Above ground marker post at each location.	• Construction corridor: Length: 60km, Width: 60m (100m at trenchless crossings). • Approximate working easement: 38m • Main construction compound: Number: 1, Area: 30,000m^2. • Secondary construction compounds (with CBS Batching): Number: 2, Area 7,500m^2. • Secondary construction compounds (without CBS Batching): Number: 6, Area 2,500m^2. • Trenchless crossing compounds: Area: 1,500m^2 – 4,500m^2. • Total works area (incl. compounds and accesses): 4566250.6m^2. • Cable trench: Number: 2, Width at base: 0.85m, Width at surface: 3m, Depth: 2m. • Haul road: Number :1, Length: 55km, Width: 5m (8m at passing places), Total area: 315,640m^2. • Jointing bays: Typical frequency: Every 1000m, Approximate number: 120, Dimensions: 16m (L) x 3.5m (W) x 2m (D) (per circuit). • Link boxes: Typical frequency: Every 1000m, Approximate number: 120, Dimensions: 2.6m (L) x 2m (W) x 1.5m (D)	• Construction corridor: Length: 60km, Width: 60m (100m at trenchless crossings). • Approximate working easement: 45m • Main construction compound: Number: 1, Area: 30,000m^2 for each project. • Secondary construction compounds (with CBS Batching): Number: 2, Area 7,500m^2.. • Secondary construction compounds (without CBS Batching): Number: 6, Area 2,500m^2. • Trenchless crossing compounds: Area: 1,500m^2 – 4,500m^2. • Total works area (incl. compounds and accesses): 4566250.6m^2. • Cable trench: Number: 2, Width at base: 0.85m, Width at surface: 3m, Depth: 2m. • Haul road per project: Number :1, Length: 55km, Width: 5m (8m at passing places), Total area: 315,640m^2. • Jointing bays: Typical frequency: Every 1000m, Approximate number: 120, Dimensions: 16m (L) x 3.5m (W) x 2m (D) (per circuit). • Link boxes: Typical frequency: Every 1000m, Approximate number: 120, Dimensions: 2.6m (L) x 2m (W) x 1.5m (D)	The maximum land-take, duration and removal of existing vegetation duration as a result of the temporary construction works required for the onshore cable corridor is assessed to be the RWCS, which in this case is the sequential construction of SEP and DEP. It assumes the maximum possible gap between the start of construction of SEP and DEP (four years), which would result in a total construction of up to eight years. This would result in the longest and maximum potential impact that may affect designated and non-designated landscape resources; visual receptors; and amenity.

Impact	SEP or DEP in Isolation	SEP and DEP Concurrently	SEP and DEP Sequentially	Notes and Rationale
	• Hedgerow crossings: Typical width of removal at open cut crossings: 12m, trenchless crossing with a lockout: 0m, trenchless crossing with cross over point: 12m, trenchless crossing with an access bellmouth: 20m (worst-case scenario). • Watercourse crossings: Trenchless crossing methods for all main rivers and Internal Drainage Boards (IDB) watercourses. Open cut with temporary dam and divert for most minor watercourses and temporary use of bridges where appropriate. • Road crossings: Trenchless crossing methods for all A and B roads. Open cut for most minor roads. Refer to Crossing Schedule, which is included as **Appendix 4.1 Crossing Schedule** for full details. • Ecologically sensitive areas: 8m Trenchless crossing may be required, where a lockout is not feasible or practical and the impact to the environmentally sensitive area can be mitigated through the use of trackway mating (or equivalent). This would limit the boundary of the affected area to 8m, allowing for the haul road and a 3m bund. • Vegetation reinstatement: To be undertaken at the end of the construction works for the entire onshore cable corridor: (i.e. after 26 months). • Duration of works: Onshore cable ducting and installation (incl. reinstatement): 24 months. Main construction compound: Full duration of onshore construction works (approximately 24 months). Secondary construction compounds (with CBS batching): operational life – 18 - 24 months, actively in operation for approximately 14 months. Secondary construction compound (without CBS batching): operational life 12 – 18 months, actively in operation for approximately 6 months. Trenchless crossing compounds: 7 weeks.	(per circuit). Above ground marker post at each location. • Hedgerow crossings: Typical width of removal at open cut crossings: 12m, trenchless crossing with a lockout: 0m, trenchless crossing with cross over point: 12m, trenchless crossing with an access bellmouth: 20m (worst-case scenario). • Watercourse crossings: Trenchless crossing methods for all main rivers and IDB watercourses. Open cut with temporary dam and divert for most minor watercourses and temporary use of bridges where appropriate. • Road crossings: Trenchless crossing methods for all A and B roads. Open cut for most minor roads. Refer to Crossing Schedule, which is included as **Appendix 4.1 Crossing Schedule** for full details. • Ecologically sensitive areas: 8m Trenchless crossing may be required, where a lockout is not feasible or practical and the impact to the environmentally sensitive area can be mitigated through the use of trackway mating (or equivalent). This would limit the boundary of the affected area to 8m, allowing for the haul road and a 3m bund. • Vegetation reinstatement: To be undertaken at the end of the construction works for the entire onshore cable corridor: (i.e. after 28 months). • Duration of works: Onshore cable ducting and installation (incl. reinstatement): 26 months. Main construction compound: Full duration of onshore construction works (approximately 26 months). Secondary construction compounds (with CBS batching): operational life – 18 - 24 months, actively in operation for approximately 14 months. Secondary construction compound (without CBS batching): operational life 12 – 18 months, actively in operation for approximately 6 months. Trenchless crossing compounds: 12 weeks.	(per circuit). Above ground marker post at each location. • Hedgerow crossings: Typical width of removal at open cut crossings: 12m, trenchless crossing with a lockout: 0m, trenchless crossing with cross over point: 12m, trenchless crossing with an access bellmouth: 20m (worst-case scenario). • Watercourse crossings: Trenchless crossing methods for all main rivers and IDB watercourses. Open cut with temporary dam and divert for most minor watercourses and temporary use of bridges where appropriate. • Road crossings: Trenchless crossing methods for all A and B roads. Open cut for most minor roads. Refer to Crossing Schedule, which is included as **Appendix 4.1 Crossing Schedule** for full details. • Ecologically sensitive areas: 8m Trenchless crossing may be required, where a lockout is not feasible or practical and the impact to the environmentally sensitive area can be mitigated through the use of trackway mating (or equivalent). This would limit the boundary of the affected area to 8m, allowing for the haul road and a 3m bund. • Vegetation reinstatement: To be undertaken at the end of the construction works for the entire onshore cable corridor: (i.e. after 28 months). • Duration of works: Onshore cable ducting and installation (incl. reinstatement): 48 months. Main construction compound: Full duration of onshore construction works (approximately 24 months per project i.e. 48 months). Secondary construction compounds (with CBS batching): operational life – 18 - 24 months, actively in operation for approximately 14 months, per project. Secondary construction compound (without CBS batching): operational life 12 – 18 months, actively in operation for approximately 6 months, per project. Trenchless crossing compounds: 7 weeks per project.	

Impact	SEP or DEP in Isolation	SEP and DEP Concurrently	SEP and DEP Sequentially	Notes and Rationale
	Onshore Substation and 400kv connections			
	• Substation platform: Area: 3.25ha, Depth of topsoil strip: 300mm. • Substation compounds: Number: 2, Total area: 12,500m^2. • Permanent access road: Number: 1, Length: 850m: Width: 6m, Area: 5,100m^2. • 400kv connection: Approximate length: 850, Width: 38m working easement, Cable trench depth: 1.20m. • Duration of works: Substation compounds and construction: 28 months.	• Substation platform: Area: 6.0ha, Depth of topsoil strip: 300mm. • Substation compounds: Number: 2, Total area: 12,500m^2. • Permanent access road: Number: 1, Length: 850m: Width: 6m, Area: 5,100m^2. • 400kv connection: Approximate length: 850, Width: 38m working easement, Cable trench depth: 1.20m. • Duration of works: Substation compounds and construction: 30 months.	• Substation platform: Area: 6.0ha, Depth of topsoil strip: 300mm. • Substation compounds: Number: 2, Total area: 12,500m^2. • Permanent access road: Number: 1, Length: 850m: Width: 6m, Area: 5,100m^2. • 400kv connection: Approximate length: 850m, Width: 45m working easement (total for the two overlapping Projects), Cable trench depth: 1.20. • Duration of works: Substation compounds and construction: 28 months per project.	The maximum land-take, duration and vegetation removal as a result of the temporary construction works required for the onshore substation and 400kv connection is assessed to be the RWCS, which in this case is the sequential construction of SEP and DEP. It assumes the maximum possible gap between the start of construction of SEP and DEP (four years), which would result in a total construction of up to eight years. This would result in the longest and maximum potential impact that may affect designated and non-designated landscape resources; visual receptors; and amenity.
Operation				
Potential impacts on landscape and visual resources The long-term impact of the onshore substation during the operation phase may affect landscape resources and landscapes and features protected by local policy. The long-term impact of the onshore substation during the operation phase may affect visual receptors.	**Onshore Substation and 400kv connections**			
	• Substation platform: 3.25ha. • Permanent access road: Number: 1, Length: 850m: Width: 6m, Area: 5,100m2 • Maximum platform level = 28.23m Above Ordinance Datum (AOD). • Main buildings: Number: 2, Maximum dimensions: 30m (L) x 14m (W) x 15m (H). • Main building fabric: Steel framed building with cladding. • Main ancillary infrastructures: carpark, control room, welfare facilities. • Maximum lighting protection mast heights: 30m above platform level. • Substation utility requirements: mains water, electricity, telecoms, broadband, sewage and drainage. • Duration: 40-years. • Landscaping (indicative): Installation of new tree, scrub and grassland planting, in accordance with proposals set out in **OLMP** (document reference 9.18).	• Substation platform: Area: 6.0ha. • Permanent access road: Number: 1, Length: 850m: Width: 6m, Area: 5,100m2 • Maximum platform level = 28.23m AOD. • Main buildings: Number: 4, Maximum dimensions: 50m (L) x 25m (W) x 15m (H). • Main building fabric: Steel framed building with cladding. • Main ancillary infrastructures: carpark, control room, welfare facilities. • Maximum lighting protection mast heights: 30m above platform level. • Substation utility requirements: mains water, electricity, telecoms, broadband, sewage and drainage. • Duration: 40-years. • Landscaping (indicative): Installation of new tree, scrub and grassland planting, in accordance with proposals set out in **OLMP** (document reference 9.18).	• Substation platform: Area: 6.0ha. • Permanent access road: Number: 1, Length: 850m: Width: 6m, Area: 5,100m2 • Maximum platform level = 28.23m AOD. • Main buildings: Number: 4, Maximum dimensions: 30m (L) x 14m (W) x 15m (H) for each project. • Main building fabric: Steel framed building with cladding. • Main ancillary infrastructures: carpark, control room, welfare facilities. • Maximum lighting protection mast heights: 30m above platform level. • Substation utility requirements: mains water, electricity, telecoms, broadband, sewage and drainage. • Duration: 40-years. The substation could be in place for approximately 44-years if the Projects are built sequentially and the substation is removed, and site reinstated at the end of the life of the second Project. • Landscaping (indicative): Installation of new tree, scrub and grassland planting, in accordance with proposals set out in **OLMP** (document reference 9.18).	The highest development platform, buildings and lighting mast height parameters and maximum land-take are assessed to be the RWCS. This would result in the maximum potential impact that may affect designated and non-designated landscape resources; visual receptors; and amenity. The longest duration of operation is assessed to be the RWCS, which in this case is the sequential operation of SEP and DEP and assumes the maximum possible gap between the start of construction of SEP and DEP (four years), which would result in a total construction of up to eight years.

Impact	SEP or DEP in Isolation	SEP and DEP Concurrently	SEP and DEP Sequentially	Notes and Rationale
Decommissioning				
No final decision has yet been made regarding the final decommissioning policy for the onshore project infrastructure including landfall, onshore cable corridor and onshore substation. It is also recognised that legislation and industry best practice change over time. However, it is likely that the onshore project equipment, including the cable, will be removed, reused or recycled where possible and the transition bays and cable ducts being left in place. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and will be agreed with the regulator. It is anticipated that for the purposes of a worst-case scenario, the impacts will be no greater than those identified for the construction phase.				

26.3.2.5 Introduction

39. The LVIA is based on a 'mitigation by design' approach, which means that during the course of the design development of the onshore components for SEP and/or DEP, landscape matters have been considered for as an integral part of the design process. These embedded mitigation measures are described in **Chapter 4 Project Description** and the **OLMP** (which is submitted as part of the DCO application, see document reference 9.18).

40. The 'mitigation by design' approach is underpinned by the early decision to minimise the potential effects that might arise as a result of SEP and/or DEP on landscape and/or visual recourse.

41. With regard to the onshore cable corridor, the first key design intervention was to have a combined cable corridor, and to underground the cables, thus avoiding the visual intrusion of new pylons and overhead cables during the operational phase. Subsequent cable routing has been designed to avoid settlement as far as possible (and thus reduce potential visual effects of the construction period), and to avoid crossing woodlands and areas or groups of trees, where possible. Where this is not possible, for example, Weybourne Wood within the Norfolk Coast AONB, would be retained, by utilising trenchless crossing techniques (See **Chapter 4 Project Description** and **Appendix 4.1 Crossing Schedule**) to minimise impacts in so far as possible. The same approach (where necessary) is proposed at locations where the cable corridor crosses other features such as main roads, railways and watercourses. Where such an interaction occurs, any trees, hedgerows and other vegetation associated with the feature would not be affected as a consequence of the trenchless crossing.

42. With regards to the onshore substation, key design interventions included the selection of the final onshore substation site (chosen from the two options assessed) and reducing, in so far as possible, the height of the onshore substation's platform height from the maximum parameter assessed for the ES.

43. The design considered, in combination with other topics, the implications of surrounding landscape features – such as woodland, tree belts, hedgerows, buildings and landform; the influence of the existing infrastructure within the context of the onshore substation sites; the sensitivity, and number, of their closet visual receptors; and the reduction in height of the maximum platform level.

44. Site selection, route design and construction techniques are therefore a key part of the embedded mitigation proposals.

45. In accordance with this approach, the LVIA describes, in the following sections, the range of appropriate and embedded landscape mitigation measures that address the specific effects predicted to occur. The LVIA is therefore based upon the assumption that they would be implemented as an integral part of the SEP and DEP.

26.3.2.5.1 Onshore Cable Corridor

46. As described in **Chapter 4 Project Description**, the total construction corridor width/Order Limits are as follows:

- 45m for SEP or DEP;

- 60m for SEP and DEP (concurrently or sequentially);
- 100m for all scenarios at trenchless crossings; and
- 250m for SEP and/or DEP HDD crossings at the landfall.

47. However, an approximate working easement – the extents that the construction activities will require temporary access to install the cables – would be accommodated within the Order Limits and be narrower in most cases. The working easements would be as follows:

- An approximate 27m working easement for SEP or DEP;
- An approximate 38m working easement for SEP and DEP if built concurrently; or
- An approximate 45m working easement for SEP and DEP if built sequentially.

48. Working easements at trenchless crossings along the cable corridor and at the landfall would remain as per the Order Limit (i.e. 100m and 250m).

49. The purpose of the wider Order Limits is to allow enough room for micro-siting of the working easement during the detailed design stage of the SEP and/or DEP, and for onward connection to the existing surface water drainage network for the proposed construction drainage. This means the installation of the onshore cable in reality would affect landscape and/or visual resources to a lesser degree than the full Order Limit width suggests. In some cases, the full working easement will not be required, and therefore, the potential effects on landscape and/or visual resources would be affected even less.

50. As stated above, the LVIA is based on a 'mitigation by design' approach. As a result, the onshore cable corridor, including the landfall area, has been developed with consideration to a number of constraints, including ecology and landscape. The onshore cables would be buried underground for the entire length of the onshore cable corridor. Burying the cables would lead to lesser landscape and visual effects than overhead power lines. The route of the onshore cable corridor has been designed to avoid crossing woodlands and areas or groups of trees, were possible. Where this is not possible, all significant woodlands, including Weybourne Wood within the Norfolk Coast AONB, and many smaller woodlands and areas of trees and scrub would be retained where they lie within the cable corridor, by utilising trenchless crossing techniques (See **Chapter 4 Project Description** and **Appendix 4.1 Crossing Schedule**). The only exception would be the localised removal of vegetation at the HDD launch and reception pit (approximately 50m x 100m area within the woodland) and access routes within Weybourne Wood.

51. In addition, where the cable corridor cross local roads, railways and/or watercourses, it would be installed via trenchless crossing techniques (such as HDD) and therefore avoid the loss of hedgerow and vegetation associated with the feature.

52. Where hedgerows and individual trees occur within the construction area of the cable corridor (and cables are not installed by trenchless techniques), they would be removed. Typically, hedgerows would be removed as follows:

- within the 12m crossing for either SEP or DEP in isolation; or

- within the 20m crossing for SEP and DEP (concurrently or sequentially).

53. Where a bellmouth access junctions or cross-over points are required as part of a trenchless crossing, the following length would be removed:

- Bellmouth access: 20m either side of the crossing for SEP and/or DEP (all scenarios).
- Cross over point: 12m either side of the crossing for SEP and/or DEP (all scenarios).

54. Hedges would be re-planted in all scenarios on their original alignment. Trees and woodland would be replanted within the construction corridor/Order Limits but outside the final permanent cable corridor easement. Where both SEP and DEP are built (concurrently or sequentially) the permanent easement will be 20m. Where only SEP or DEP is constructed, the permanent easement will be 10m. Within this permanent easement, tree planting would be prohibited. Planting would be implemented during the first planting season following the completion of entire construction of the cable installation works, of either SEP or DEP (subject to landowner agreements), whether constructed concurrently or sequentially, and maintained for ten years.

55. Work has been carried out to identify further measures to minimise tree, woodland and hedgerow removal. Further details on hedgerow and tree removal, retention, replacement and management are presented in the **OLMP** and **OEMP** (document reference 9.18 and 9.19) submitted with the DCO application.

26.3.2.6 Onshore Substation

56. Two onshore substation sites were assessed following initial feasibility studies and a selection process, which considered a number of potential sites. One site has been selected following further site option and feasibility studies, and feedback received during public consultation. It is referred to hereafter as the 'onshore substation' for the purposes of this chapter.

57. Landscape and visual considerations fed into the studies and final site selection process. The final onshore substation site has been identified as the most suitable site from a landscape and visual perspective for a number of reasons including:

- It lies within an area of arable fields enclosed by woodland, tree belts and hedgerows which restricts potential visibility and effects to a relatively small area of landscape.
- The existing woodlands and tree belts provide a context where further tree and woodland planting to integrate the onshore substation into the landscape and provide further screening would be appropriate.
- The site lies within an area already influenced by existing electrical infrastructure including the Norwich Main substation to the north, and lines of pylons and overhead wires, one of which crosses the fields west of the onshore substation site. Other existing infrastructure lies to the east – the Norwich-Stowmarket main railway line and A140. Grid and other infrastructure are already characteristic of this location.

- The onshore substation lies west of the adjacent landscape character area (LCA) A1 Tas Rural River Valley. Policy DM 4.5 of the South Norfolk Development Management Development Document (adopted October 2015) states *"Particular regard will be had to protecting the distinctive characteristics, special qualities and geographical extents of the identified Rural River Valleys and Valley Urban Fringe landscape character types"*. Assessment identified that the site would not affect this LCA due to the presence of existing tree and woodland vegetation that would largely screen the onshore substation from the LCA.
- There are relatively few sensitive visual receptors within close proximity to the site that have potential to have clear views of the onshore substation, or to be significantly affected.
- There are no residential receptors that would have clear or close views of the onshore substation.
- Site selection is therefore a key part of the embedded mitigation proposals.

58. An illustrative landscape scheme has been prepared as part of the DCO submission, which is descried in the **OLMP** (document reference 9.18). The **OLMP** presents the key landscape principles and proposals. These landscape proposals form part of the embedded mitigation measures that are considered in the assessment of effects in **Section 26.6**.

26.4 Impact Assessment Methodology

26.4.1 Policy, Legislation and Guidance

59. The following sections detail information on the key pieces of UK legislation, policy and guidance relevant to the assessment within this chapter. Further detail where relevant is provided in **Chapter 2 Policy and Legislative Context**.

26.4.1.1 National Policy

26.4.1.1.1 National Policy Statements

60. The assessment of potential impacts upon landscape and visual receptors has been made with specific reference to the relevant NPS. These are the principal decision-making documents for Nationally Significant Infrastructure Projects (NSIPs). Those relevant to SEP and DEP are:

- Overarching NPS for Energy (EN-1) (Department of Energy and Climate Change (DECC) 2011a);
- NPS for Renewable Energy Infrastructure (EN-3) (DECC 2011b); and
- NPS for Electricity Networks Infrastructure (EN-5) (DECC 2011c).

61. The specific assessment requirements for the LVIA, as detailed in the NPS, are summarised in **Table 26-3** together with an indication of the section of the ES chapter where each is addressed.

Table 26-3: NPS Assessment Requirements

NPS Requirement	NPS Reference	Section Reference
NPS for Energy (EN-1)		
"Where some details are still to be finalised the ES should set out, to the best of the applicant's knowledge, what the maximum extent of the proposed development may be in terms of site and plant specifications, and assess, on that basis, the effects which the project could have to ensure that the impacts of the project as it may be constructed have been properly assessed."	Paragraph 4.2.8	As set out in **Section 26.3.2**, the RWCS has been assessed within this LVIA.
"Good design is also a means by which many policy objectives in the NPS can be met, for example the impact sections show how good design, in terms of siting and use of appropriate technologies can help mitigate adverse impacts such as noise."	Paragraph 4.5.2	The approach to Good Design is presented in the **DAS** (document reference 9.3).
"In the light of the above, and given the importance which the Planning Act 2008 places on good design and sustainability, the IPC [now the Planning Inspectorate and the Secretary of State] needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be. In so doing, the IPC should satisfy itself that the applicant has taken into account both functionality (including fitness for purpose and sustainability) and aesthetics (including its contribution to the quality of the area in whichh it would be located) as far as possible. 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, landform 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."	Paragraph 4.5.3	The approach to Good Design is presented in the **DAS** (document reference 9.3).
"For the IPC [now the Planning Inspectorate and the Secretary of State] to consider the proposal for a project, applicants should be able	Paragraph 4.5.4	The approach to Good Design is presented in the **DAS** (document reference 9.3).

NPS Requirement	NPS Reference	Section Reference
to demonstrate in their application documents how the design process was conducted and how the proposed design evolved. Where a number of different designs were considered, applicants should set out the reasons why the favoured choice has been selected In considering applications the IPC 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."		
Paragraph 5.9.5 of EN-1 advises that the applicant should carry out a landscape and visual assessment and makes reference to the following documents: • *Guidelines for Landscape and Visual Impact Assessment, Second Edition (Landscape Institute and IEMA, 2002); and* • *Landscape Character Assessment – Guidance for England and Scotland (Land Use Consultants, 2002).*	Paragraph 5.9.5	This LVIA has been prepared following the updated versions of these documents and other recognised guidelines: • 'The Guidelines for Landscape and Visual Impact Assessment, Second Edition' (GLVIA) (Landscape Institute and IEMA, 2002) has been superseded by 'The Guidelines for Landscape and Visual Impact Assessment, Third Edition' (Landscape Institute and IEMA, 2013) (GLVIA3). • 'Landscape Character Assessment – Guidance for England and Scotland' (Land Use Consultants, 2002) has been superseded by 'An Approach to Landscape Character Assessment' (Natural England, 2014).
"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 …."	Paragraph 5.9.5	Published landscape character assessments, and other associated studies, and relevant policies based on these assessments within the extent of the study areas, of onshore cable corridor and onshore substation, are reviewed and considered as part of the baseline study contained within **Section 26.4.6.1**. Those that merit detailed consideration in the assessment of effects have been taken forward to **Section 26.6**.

NPS Requirement	NPS Reference	Section Reference
"The applicant's assessment should include the effects during construction of the project and the effects of the completed development and its operation on landscape components and landscape character."	Paragraph 5.9.6	Effects on landscape character and visual amenity are assessed as described in **Section 26.6** as follows: • Onshore cable corridor – construction phase. • Onshore substation – construction, operation and decommissioning phases.
"The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity."	Paragraph 5.9.7	
"Landscape effects depend on the existing character of the local landscape, its current quality, how highly it is valued and its capacity to accommodate change. All of these factors need to be considered in judging the impact of a project on landscape. Virtually all nationally significant energy infrastructure projects will have effects on the landscape. 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."	Paragraph 5.9.8	The quality, value and capacity of the landscape to accommodate change are considerations of this LVIA, and have informed the proposals for mitigation in **Section 38** and the assessment of landscape impacts in **Section 26.6**. The approach to Good Design is presented in the **DAS** (document reference 9.3).
"Outside nationally designated areas, there are local landscapes that may be highly valued locally and protected by local designation. Where a local development document in England has policies based on landscape character assessment, these should be paid particular attention. However, local landscape designations should not be used in themselves to refuse consent, as this may unduly restrict acceptable development."	Paragraph 5.9.14	The value of the local landscape is considered as part of the baseline study contained within **Section 26.4.6.1**, and is informed by local landscape designations identified in local development plans documents. Effects on landscape character are assessed in detail in **Section 26.6**.
"The IPC [now the Planning Inspectorate and the Secretary of State] should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape, including by reasonable mitigation."	Paragraph 5.9.17	The approach to Good Design is presented in the **DAS** (document reference 9.3). **Chapter 3 Site Selection and Assessment of Alternatives** of the ES sets out the iterative process that has influenced the design of SEP and/or DEP. Design and mitigation for the onshore substation and cable corridor are summarised in in **Section 38.**
"*Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure*	Paragraph 5.9.22	The approach to Good Design is presented in the **DAS** (document reference 9.3).

NPS Requirement	NPS Reference	Section Reference
within that site, design including colours and materials, and landscaping schemes, depending on the size and type of the proposed project. Materials and designs of buildings should always be given careful consideration."		**Chapter 3 Site Selection and Assessment of Alternatives** of the ES sets out the iterative process that has influenced the design of SEP and/or DEP. Design and mitigation for the onshore substation and cable corridor are summarised in in **Section 38.**
NPS for Renewable Energy Infrastructure (EN-3)		
"Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology."	Paragraph 2.4.2	The approach to Good Design is presented in the **DAS** (document reference 9.3). The **OLMP** (document reference 9.18) presents the key landscape principles and proposals to minimise impacts and provide screening. It describes how the SEP and/or DEP projects would minimise tree, hedge and shrub loss, and how new or replacement planting would be implemented and maintained.
"In sites with nationally recognised designations (Sites of Special Scientific Interest, National Nature Reserves, National Parks, the Broads, Areas of Outstanding Natural Beauty and Registered Parks and Gardens), consent for renewable energy projects should only be granted where it can be demonstrated that the objectives of designation of the area will not be compromised by the development, and any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by the environmental, social and economic benefits."	Paragraph 2.5.33	The potential for SEP and/or DEP to affect nationally designated landscapes has been considered in **Section 26.4.6.1** and **Section 26.6**, including assessment on the Special Qualities of the Norfolk Coast AONB and on the North Norfolk Heritage Coast, where they relate to landscape and visual matters. An assessment of the effects of the Projects on all of the Special Qualities of the Norfolk Coast AONB are presented in' An Assessment of the **Impacts on the Qualities of Natural Beauty of the Norfolk Coast Area of Outstanding Natural Beauty** (document reference 9.25).
NPS for Electricity Networks Infrastructure (EN-5)		
"As well as having duties under section 9 of the Electricity Act 1989, (in relation to developing and maintaining an economical and efficient network), developers will be influenced by Schedule 9 to the Electricity Act 1989, which places a duty on all transmission and distribution licence holders, in formulating proposals for new electricity networks infrastructure, to "have regard to the desirability of preserving natural beauty, of conserving flora, fauna	Paragraph 2.2.6	SEP and/or DEP have been designed to preserve natural beauty of the countryside and preserve features of special interest as reasonably possible.

NPS Requirement	NPS Reference	Section Reference
and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and … do what [they] reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects."		
"…when considering impacts for electricity networks infrastructure, all of the generic impacts covered in NPS EN-1 are likely to be relevant, even if they only apply during one phase of the development (such as construction) or only apply to one part of the development (such as a substation)."	Paragraph 2.6.1	The potential for the onshore components of SEP and/or DEP to affect landscape and visual receptors has been considered in **Section 26.6**.
"…New substations, sealing end compounds and other above ground installations that form connection, switching and voltage transformation points on the electricity networks can also give rise to landscape and visual impacts. Cumulative landscape and visual impacts can arise where new overhead lines are required along with other related developments such as substations, wind farms and/or other new sources of power generation."	Paragraph 2.8.2	The potential for the onshore components of SEP and/or DEP to affect landscape and visual receptors has been considered in **Section 26.6**. Cumulative effects with other projects are assessed in **Section 26.7**.

26.4.1.1.2 Draft National Policy Statements

62. During the course of the Project, updates to relevant NPS (to this ES Chapter) were published (in draft) for consultation in September 2021 by the Department for Business Energy and Industrial Strategy (BEIS).

63. A review of these documents shows that for a number of the current NPS, no additional requirements have been proposed.

64. **Table 26-4** details where it has been identified additional requirements have been proposed and sets out where this would be addressed in this chapter or wider ES. Minor changes to wording or changes paragraph numbering have not been documented below, as they would not materially influence the current NPS requirements should the draft be adopted in the future.

Table 26-4: Draft NPS Assessment – Additional Requirements

Draft NPS Additional Requirement	Draft NPS Reference	Section Reference
Draft NPS for Energy (EN-1)		
"Applicants should consider how landscapes can be enhanced using landscape management plans, as this will help to enhance environmental	Paragraph 5.10.10	The approach to Good Design is presented in the **DAS** (document reference 9.3). The **OLMP** (document reference 9.18) presents the key landscape principles and proposals to minimise impacts and provide screening. It describes how the SEP and/or

Draft NPS Additional Requirement	Draft NPS Reference	Section Reference
assets where they contribute to landscape and townscape quality."		DEP projects would minimise tree, hedge and shrub loss, and how new or replacement planting would be implemented and maintained.
Draft NPS for Renewable Energy Infrastructure (EN-3)		
"*In sites with nationally recognised designations (SSSIs, National Nature Reserves, National Parks, the Broads, Areas of Outstanding Natural Beauty, Registered Parks and Gardens, and Marine Conservation Zones), consent for renewable energy projects should only be granted where the relevant tests in Sections 5.4 and 5.10 of EN-1 are met and any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by the environmental, social and economic benefits. The Secretary of State should have regard to the aims and goals of the government's 25 Year Environment Plan and other existing and future measures and targets in England, including under the new strategy for nature."*	Paragraph 2.22.21 *(Originally Paragraph 2.5.33)*	This LVIA, alongside other documents supporting the DCO application, addresses the tests set out in Section 5.4 and 5.10 of EN-1 identifying all significant adverse effects on nationally recognised designations.
Draft NPS for Electricity Networks Infrastructure (EN-5) (2021c)		
The draft EN-5 does not contain additional requirements to those of the current EN-5		

26.4.1.1.3 National Planning Policy Framework (July 2021)

65. The National Planning Policy Framework (Ministry of Housing, Communities & Local Government., July 2021) (NPPF) makes clear that the purpose of planning is to help achieve sustainable development (Section 2), and that design (Section 12), and effects on the natural environment (Section 15) are important components of this.

66. Paragraph 11 sets out that in determining applications for development this means that developments which accord with an up-to-date development plan should be approved. Where the development plan is not fit for the purpose of determining the application, paragraph 11 directs that the permission should be granted unless *"any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole"* or *"the application of policies in this Framework that protect areas or assets of particular importance provides a strong reason for restricting the overall scale, type or distribution of development in the plan"*. The areas or assets of particular importance in respect of landscape and visual matters referred to within the relevant footnote 7 are:

- AONB;
- National Parks including the Norfolk Broads;

- Heritage Coast.

67. The list also includes important habitats sites, irreplaceable habitats and/or designated as Sites of Special Scientific Interest; land designated as Green Belt or Local Green Space; designated heritage assets or heritage assets of archaeological interest; and areas at risk of flooding or coastal change.

68. Section 12 sets out consideration in 'Achieving well-designed places' and indicates in paragraph 127 (Section 12) that decisions should ensure that developments:

"a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;

b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;

c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);

d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;

e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) …"

69. Section 15 of the NPPF covers both ecological and landscape matters. Paragraph 174 requires that decisions should contribute by:

"a) protecting and enhancing valued landscapes, … (in a manner 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; …"

70. In respect of valued landscapes, paragraph 175 notes that planning policy should *"distinguish between the hierarchy of international, national and locally designated sites".* Paragraphs 176 – 178 require that:

71. *"176. 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 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.*

72. *177. When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty, permission should be refused for major development[60] other than in exceptional circumstances, and where it can be*

demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of:

a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;

b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and

c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.

178. Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 176), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character."

73. Footnote 60 notes that *"whether a proposal is 'major development' is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined".*

74. Paragraph 185 requires decisions to ensure that *"…new development is appropriate for its location…including by limiting the impact of light pollution on local amenity and "intrinsically dark landscapes".*

75. The potential for the onshore components of SEP and DEP to affect the Norfolk Coast AONB has been considered in **Section 26.4.6.1** and **Section 26.6**.

26.4.1.2 Local Planning Policy

76. Regional and local planning policy relevant to this chapter are set out in **Table 26-5**.

Table 26-5: Summary of Relevant Regional and Local Policies

Summary of relevant policies	Commentary
Joint Core Strategy for Broadland, Norwich and South Norfolk (2014)	
Policy 2 – Promoting Good Design This policy states [inter alia]: *"All development will be designed to the highest possible standards, creating a strong sense of place. In particular development proposals will respect local distinctiveness including as appropriate:* • the landscape setting of settlements including the urban/rural transition and the treatment of 'gateways' • the landscape character and historic environment, taking account of conservation area appraisals and including the wider countryside and the Broads area • townscape, including the city and the varied character of our market towns and villages"	The approach to Good Design is presented in the **DAS** (document reference 9.3). Good design has been considered through measures including cable corridor route selection and substation site selection, vegetation retention and planting.
North Norfolk Core Strategy: Incorporating Development Control Policies (2008, updated 2012)	

Summary of relevant policies	Commentary
Policy EN1 – Norfolk Coast Area of Outstanding Natural Beauty and The Broads This policy sets out the protection of the Norfolk Coast AONB and The Broads. It states [inter alia]: *"…Development will be permitted where it:* • is appropriate to the economic, social and environmental well-being of the area or is desirable for the understanding and enjoyment of the area; • does not detract from the special qualities of the Norfolk Coast AONB or The Broads; and • seeks to facilitate delivery of the Norfolk Coast AONB management plan objectives. *Proposals that have an adverse effect will not be permitted unless it can be demonstrated that they cannot be located on alternative sites that would cause less harm and the benefits of the development clearly outweigh any adverse impacts…Development proposals that would be significantly detrimental to the special qualities of the Norfolk Coast AONB or The Broads and their settings will not be permitted."*	Minimising adverse impacts on the Norfolk Coast AONB has been considered as part of the onshore cable corridor design. Mitigation measures are described in **Section 38**. Effects due to the construction of the onshore cable corridor on the Norfolk Coast AONB are assessed in **Section 26.6.2.3**.
Policy EN2 – Protection and Enhancement of Landscape and Settlement Character This policy states [inter alia]: *"Proposals for development should be informed by, and be sympathetic to, the distinctive character areas identified in the North Norfolk Landscape Character Assessment and features identified in relevant settlement character studies. Development proposals should demonstrate that their location, scale, design and materials will protect, conserve and, where possible, enhance:* • the special qualities and local distinctiveness of the area (including its historical, biodiversity and cultural character) … • the pattern of distinctive landscape features, such as watercourses, woodland, trees and field boundaries, and their function as ecological corridors for dispersal of wildlife • visually sensitive skylines, hillsides, seascapes, valley sides and geological features • nocturnal character…"	Landscape character has been considered through measures including onshore cable corridor route selection and measures to minimise loss of landscape features such as hedgerows and trees, and to replace them following completion of construction where possible. Mitigation measures are described in **Section 38**.
Policy EN3 – Undeveloped Coast This policy states [inter alia]: *"In the Undeveloped Coast only development that can be demonstrated to require a coastal location and that will not be significantly detrimental to the open coastal character will be permitted. …"*	The landfall and onshore cable corridor have to pass through a coastal location. Construction works would be short term and temporary and would have very limited potential to affect the open coastal character. During operation the onshore cables would be underground and there

Summary of relevant policies	Commentary
	would be no potential to affect the open coastal character.
Broadland District Council Development Management DPD (2015)	
Policy GC4 – Design This policy states [inter alia]: *"Development will be expected to achieve a high standard of design and avoid and any significant impact. … Proposals should pay adequate regards to:* • The environment, character and appearance of an area; • Reinforcing local distinctiveness through the careful consideration of the treatment of space through the development, the appearance of new development, the scale of new development and landscape. • Considering the impact upon the amenity of existing properties; …"	The approach to Good Design is presented in the **DAS** (document reference 9.3). Design to avoid significant impacts and having regard to environment, character and appearance of an area, local distinctiveness and impact on the amenity of existing properties have been considered through the development of the onshore components. Effects on residential visual amenity are considered in **Section 26.4.3.3.2**.
Policy EN2 – Landscape This policy states [inter alia]: *"In order to protect the character of the area, development proposals should have regards to the Landscape Character Assessment SPD, and in particular, consider any impact upon as well as seek to protect and enhance where appropriate:* • Gaps between settlements • Visually sensitive skylines, hillsides and valley sides and important views including the setting of the Broads Area; • Nocturnal character: … • Green spaces including natural and semi-natural features as well as geological/geomorphological features which make a significant contribution towards defining the character of an area."	The response of the design of the Projects to landscape character is described in the **DAS** (document reference 9.3). Landscape character has been considered through measures including onshore cable corridor route selection and measures to minimise loss of landscape features such as hedgerows and trees, and to replace them following completion of construction where possible. The potential for the onshore components of SEP and DEP to affect landscape character and views, with reference to the Broadland District Landscape Character Assessment 2008 (updated 2013) (Chris Blandford Associates 2008) is considered in **Sections 26.4.6.1** and **26.6**.
South Norfolk Development Management Development Document (2015)	
Policy DM 1.4 – Environmental Quality and Local Distinctiveness This policy states [inter alia]: • "a) The Council will work with developers to promote and achieve high quality and positive environmental improvement from all development. All development proposals must demonstrate an understanding and evaluation of the important environmental assets including locally distinctive characteristics, and justify the design approach. …	The response of the design of the Projects to environmental quality, local distinctiveness and landscape character is described in the **DAS** (document reference 9.3). Design to avoid significant impacts and having regard to environmental assets and local character has been considered through measures including onshore cable corridor route selection and substation site

Summary of relevant policies	Commentary
• d) All development should take all reasonable opportunities to: • Make a positive contribution to local character and distinctiveness; … • Work with the characteristics of the location to ensure that the necessary mitigation measures are not disproportionate to the benefits of the scale of development proposed." **Policy DM 3.8 – Design Principles** This policy states [inter alia]: *"The Council will work with applicants to achieve high quality design and positive improvement from all development, protect and enhance the environment and existing locally distinctive character and encourage innovation; the Council will refuse development that fails to take the opportunities for improving the character and quality of an area and the way the area functions."*	selection, and measures to minimise loss of landscape features such as hedgerows and trees, and to replace them following completion of construction where possible.
Policy DM 4.1 – Renewable Energy This policy states [inter alia]: "*Proposals for renewable energy generating development requiring planning permission other than for proposals for wind energy development will be supported and considered (taking account of the impact of relevant ancillary equipment) in the context of sustainable development and climate change on the wider environmental, social and economic benefits of maximising use of renewable energy.* *…* *(1) The effect of the proposal will be considered on:* • The effect on the character and appearance of the landscape; … • The amenities and living conditions of nearby residents by way of …, outlook, and overbearing effect …. • Permission will be granted where there are no significant adverse effects or where any adverse effects are outweighed by the benefits. When attributing weight to any harm, … regard will be given to national policy and guidance, statutory duty and legislation, and other policies in the Local Plan including Policy DM4.10; *(2) Where appropriate planning conditions will be imposed requiring the decommissioning and removal/dismantling of all plant and ancillary equipment, and if necessary the restoration of land, on the cessation of use."*	The potential for the onshore components of SEP and DEP to affect landscape and visual receptors has been considered in **Sections 26.4.6.1** and **26.6**. Effects on residential visual amenity are considered in **Section 26.4.3.3.2**.

Summary of relevant policies	Commentary
Policy DM 4.5 – Landscape Character and River Valleys This policy states: *"All development should respect, conserve and where possible, enhance the landscape character of its immediate and wider environment. Development proposals that would cause significant adverse impact on the distinctive landscape characteristics of an area will be refused.* *All development proposals will be expected to demonstrate how they have taken the following elements (from the 2001 South Norfolk Landscape Assessment as updated by the 2012 review) into account:* • The key characteristics, assets, sensitivities and vulnerabilities; • The landscape strategy; and • Development considerations. *Particular regard will be had to protecting the distinctive characteristics, special qualities and geographical extents of the identified Rural River Valleys and Valley Urban Fringe landscape character types."*	The selection of the onshore cable corridor route and onshore substation, and design of the onshore infrastructure, has considered the key characteristics, assets, sensitivities and vulnerabilities of the LCAs they lie within or may affect indirectly. The potential for the onshore components of SEP and DEP to affect landscape character and the Rural River Valleys and Valley Urban Fringe landscape character types is considered in **Section 26.6**.
Policy DM 4.6 – Landscape Setting of Norwich This policy states [inter alia]: *"All development proposals will not harm and where possible should enhance the landscape setting of Norwich with regard to the following considerations:* *NSBLPZ* *All development proposals within the NSBLPZ, as shown on the Policies Map, should have regard to protecting the openness of the Zone and, where possible, enhancing the landscape setting of the southern bypass, including the practice of wild flower planting and management regimes.* *Key Views* *All development proposals located within the Key Views 'cones' shown on the Policies Map should ensure they do not obstruct the long distance views to and from the City.* *Undeveloped Approaches* *All development proposals within the visual zone of influence viewed from the identified Undeveloped Approaches to Norwich should reinforce and avoid undermining the rural character of the Undeveloped Approaches to Norwich…."*	These elements of the setting of Norwich have been considered in the selection of the onshore substation site, and the design of onshore infrastructure. Effects on the landscape setting of Norwich, as defined by Policy DM 4.6, are considered in **Section 26.5.7.2**.
Policy DM 4.8 – Protection of Trees and Hedgerows This policy states: *"The Council will promote the retention and conservation of significant trees, woodlands and traditional orchards and will serve Tree Preservation Orders where necessary.* *The Council will presume in favour of the retention of 'important' hedgerows as defined by the Hedgerows Regulations 1997. The Council will safeguard and promote the appropriate management of protected and other significant trees and hedgerows, unless the need for, and benefits of, a development clearly outweigh their loss."*	Retention of trees, woodlands and hedgerows have been a factor addressed in selecting the onshore cable corridor route and onshore substation site and informing mitigation measures. A hedgerow assessment identifying 'important' hedgerows (as defined by the Hedgerows Regulations 1997) and … existing trees within the onshore order limits, are presented in **Appendix**

Summary of relevant policies	Commentary
Policy DM 4.9 – Incorporating Landscape into Design This policy states: *"Where appropriate, detailed development proposals must demonstrate a high quality of landscape design, implementation and management as an integral part of the new development.* *The provision for new planted features (such as tree belts, hedgerows, wild flowers and specimen trees) is expected to form part of development proposals from their outset and should provide an appropriate landscape setting for the scheme. …* *Landscape schemes will be required to respect the character and distinctiveness of the local landscape and should ensure that any land remodelling respects the local topographic character in terms of height, slope, angle and character. Landscape schemes should be clearly and properly specified."*	**20.1 Extended Phase 1 Habitat Survey Report**.

26.4.1.3 Legislation and Guidance

77. There are a number of pieces of guidance applicable to the assessment of potential effects on landscape character and visual amenity. Policies of relevance to this chapter are those related to design, the protection of landscape character and views, and those relating to valued landscape including the Norfolk Coast AONB, the NNHC and locally protected landscapes.

26.4.1.3.1 National Design Guide, January 2021

78. The National Design Guide (Ministry of Housing, Communities & Local Government., January 2021) guidance sets out characteristics of *"beautiful, enduring and successful places"* that reflect the *"Government's priorities and a common overarching framework"* and provides cross references to the National Planning Policy Framework.

79. The National Design Guide indicates that *"context, history and the cultural characteristics of a site, neighbourhood and region influences the location, siting and design of new developments".*

80. The National Design Guide indicates that identity *"or character of a place comes from the way that buildings, streets and spaces, landscape and infrastructure combine together… Local character makes places distinctive."*

81. SEP and DEP have been designed through measures including site selection, to minimise harm to landscape character. The onshore substation site lies within an area of landscape where there is good opportunity to respond to the local context to create a development that responds positively to its landscape and environmental context.

26.4.1.3.2 Planning Practice Guidance For Design: Process And Tools, October 2019

82. The Planning Practice Guidance for Design: process and tools (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities &

Local Government, Oct 2019) should be read alongside the National Design Guide and sets out the characteristics of well-designed places and demonstrates what good design means in practice. The guidance indicates that good design relates to ten characteristics: context; identity; built form; movement; nature; public spaces; uses; homes and buildings; resources; and lifespan.

83. In respect of the determining applications and the relationship between a proposal and the surrounding context, the guidance notes that: *"permission should be refused for development of poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions …"*

26.4.1.3.3 Planning Practice Guidance For Natural Environment, July 2019

84. The Planning Practice Guidance for Natural Environment (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government, July 2019) is intended to explain the key issues in implementing policy to protect biodiversity, enhance green infrastructure and also contains a section on landscape. This section reiterates the policy set out in the NPPF, highlights the importance of identifying the special characteristics of locally valued landscapes and recommends the use of landscape character assessments.

85. SEP and DEP have been designed through measures including site selection, to minimise harm to landscape character.

26.4.2 Data and Information Sources

86. Data has been gathered from official, reliable and the most up-to-date sources. This includes Ordnance Survey map-based data, as well as data on landscape character, landscape designations and other Governmental and Local Planning Authority data of relevance.

26.4.3 Impact Assessment Methodology

87. **Chapter 5 EIA Methodology** provides a summary of the general impact assessment methodology applied to SEP and DEP. This section describes the methodology used for the LVIA.

88. For each effect, the assessment identifies receptors sensitive to that effect and implements a systematic approach to understanding the impact pathways and the level of impacts on given receptors. The definitions of sensitivity and magnitude for the purpose of the LVIA are provided in this section.

89. *"Landscape and Visual Impact Assessment is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and people's views and visual amenity."* (Guidelines for Landscape and Visual Impact Assessment, Third Edition para. 1.1 (Landscape Institute and IEMA, 2013) (GLVIA3).

90. Paras. 2.20-2.22 of GLVIA3 indicate that the two components (assessment of landscape effects, and assessment of visual effects) are *"related but very different considerations"*.

91. Para. 2.6 of GLVIA3 states that *"This guidance is equally applicable to all forms of landscape and does not separate townscape and seascape out for special treatment."*

92. GLVIA3 explains how to assess the landscape and visual baseline, the sensitivity of landscape and visual receptors, and the magnitude of impact and significance of effect that would be caused by a development.

93. The assessment method for this LVIA draws upon the established GLVIA3; An Approach to Landscape Character Assessment (Natural England, 2014), Landscape Institute Technical Information Note (LI TIN) 05/2017 regarding townscape character; and LI TGN 02/2019 RVAA; LT TGN 02-21: Assessing landscape value outside national designations; LI TGN 06/19 Visual Representation of development proposals and other recognised guidelines.

94. The methodology is described in more detail in **Appendix 26.1 LVIA Annexes**.

26.4.3.1 Assessment Terminology and Judgements

95. The key terms used within this assessment are:

- Susceptibility and Value – which contribute to Sensitivity of the receptor;
- Scale, Duration and Extent – which contribute to the Magnitude of effect; and
- Significance.

96. These terms are described in more detail below.

26.4.3.1.1 Assessing The Sensitivity Of Landscape And Visual Receptors And Designated Landscapes

97. This section applies to landscape character, visual receptors and designated landscapes (which only occur onshore in England and Wales except for Heritage Coasts (a non-statutory landscape) which lie onshore and extend offshore).

98. **Susceptibility** indicates the ability of a landscape or visual receptor to accommodate the proposed development "without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies." (GLVIA3, para. 5.40).

Table 26-6: Landscape and Visual Receptor Susceptibility

Susceptibility	Definition
High	Undue consequences are likely to arise from the proposed development.
Medium	Undue consequences may arise from the proposed development.
Low	Undue consequences are unlikely to arise from the proposed development.

99. Susceptibility of LCAs is influenced by their characteristics and is frequently considered (though often recorded as 'sensitivity' rather than susceptibility) within documented landscape character assessments and capacity studies.

100. Susceptibility of designated landscapes is influenced by the nature of the special qualities and purposes of designation and/or the valued elements, qualities or characteristics, indicating the degree to which these may be unduly affected by the development proposed.

101. Susceptibility of accessible or recreational landscapes or seascapes is influenced by the nature of the landscape/seascape involved; the likely activities and expectations of people within that landscape/seascape and the degree to which those activities and expectations may be unduly affected by the development proposed.

102. Susceptibility of visual receptors is primarily a function of the expectations and occupation or activity of the receptors (GLVIA3, para 6.32).

103. **Landscape Value** is *"the relative value that is attached to different landscapes by society"* (GLVIA3, page 157).

Table 26-7: Landscape Value

Value	Definition
National/International	Designated landscapes which are nationally or internationally designated for their landscape value.
Local/District	Locally or regionally designated landscapes; also areas which documentary evidence and/or site observation indicates as being more valued than the surrounding area.
Community	'Everyday' landscape which is appreciated by the local community but has little or no wider recognition of its value.
Limited	Despoiled or degraded landscape with little or no evidence of being valued by the community.

104. **Sensitivity** is assessed by combining the considerations of susceptibility and value described above. The differences in the tables below reflect a slightly greater emphasis on value in considering landscape receptors, and a greater emphasis on susceptibility in considering visual receptors.

Table 26-8: Landscape Sensitivity

		Susceptibility		
		High	Medium	Low
Value	National/International	High	High-Medium	Medium
	Local/District	High-Medium	Medium	Medium-Low
	Community	Medium	Medium-Low	Low
	Limited	Low	Low-Negligible	Negligible

Table 26-9: Visual Receptor Sensitivity

		Susceptibility		
		High	**Medium**	**Low**
Value	National/International	High	High-Medium	Medium
	Local/District	High-Medium	High-Medium	Medium
	Community	High-Medium	Medium	Medium-Low
	Limited	Medium	Medium-Low	Low

105. For visual receptors; susceptibility and value are closely linked – the most valued views are also likely to be those where viewer's expectations will be highest. The value attributed relates to the value of the view, e.g. a National Trail is nationally valued for access, not necessarily for the available views. Typical examples of visual receptor sensitivity are plotted in a diagram in **Appendix 26.1 LVIA Annexes**.

26.4.3.2 Magnitude of Effect

106. **Scale of effect** is assessed for all landscape and visual receptors and identifies the degree of change which would arise from the development.

Table 26-10: Definition of Scale of Effect

Scale of effect	Definition
Large	Total or major alteration to key elements, features, qualities or characteristics, such that post development the baseline will be fundamentally changed.
Medium	Partial alteration to key elements, features, qualities or characteristics, such that post development the baseline will be noticeably changed.
Small	Minor alteration to key elements, features, qualities or characteristics, such that post development the baseline will be largely unchanged despite discernible differences.
Negligible	Very minor alteration to key elements, features, qualities or characteristics, such that post development the baseline will be fundamentally unchanged with barely perceptible differences.

107. Duration of effect is assessed for all landscape and visual receptors and identifies the time period over which the change to the receptor as a result of the development would arise.

Table 26-11: Definition of Durations of Effect

Duration	Definition
Permanent	The change is expected to be permanent and there is no intention for it to be reversed. Or where it is expected to be in place more than 25 years and will be reversed.
Long-term	The change is expected to be in place for 10-25 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe.

Duration	Definition
Medium-term	The change is expected to be in place for 2-10 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe.
Short-term	The change is expected to be in place for 0-2 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe.

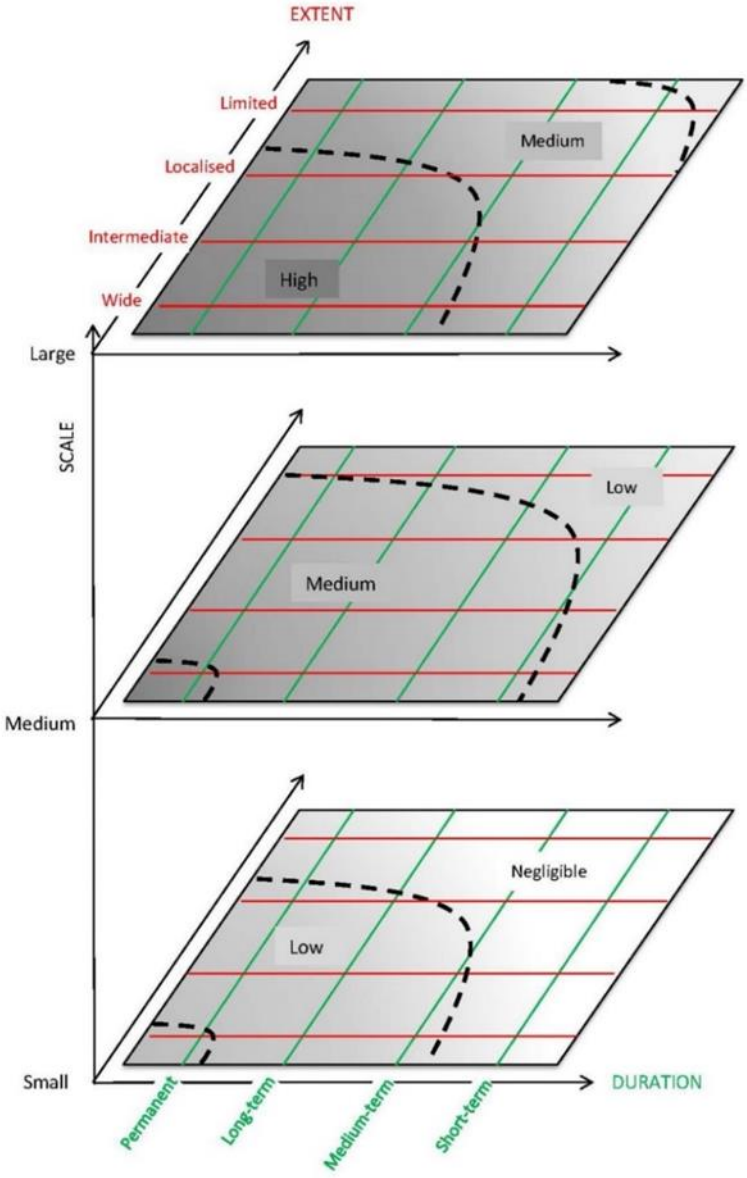
108. Effects arising from the onshore components of the operational SEP and/or DEP are defined as permanent for the purpose of impact assessment, although SEP and/or DEP are likely to be removed after 40-years in operation. Effects arising from the construction of the SEP and/or DEP will be medium-term.

Table 26-12: Extent of Effect

Duration	Definition
Wide	Beyond 4km, or more than half of receptor.
Intermediate	Up to approx. 2-4km, or around half of receptor area.
Localised	Site and surroundings up to 2km, or part of receptor area (up to approx. 25%).
Limited	Site, or part of site, or small part of a receptor area (< approx. 10%).

109. The Magnitude of effect is informed by combining the scale, duration and extent of effect. **Diagram 26-1** below illustrates the judgement process:

Diagram 26-1: Magnitude of Effect



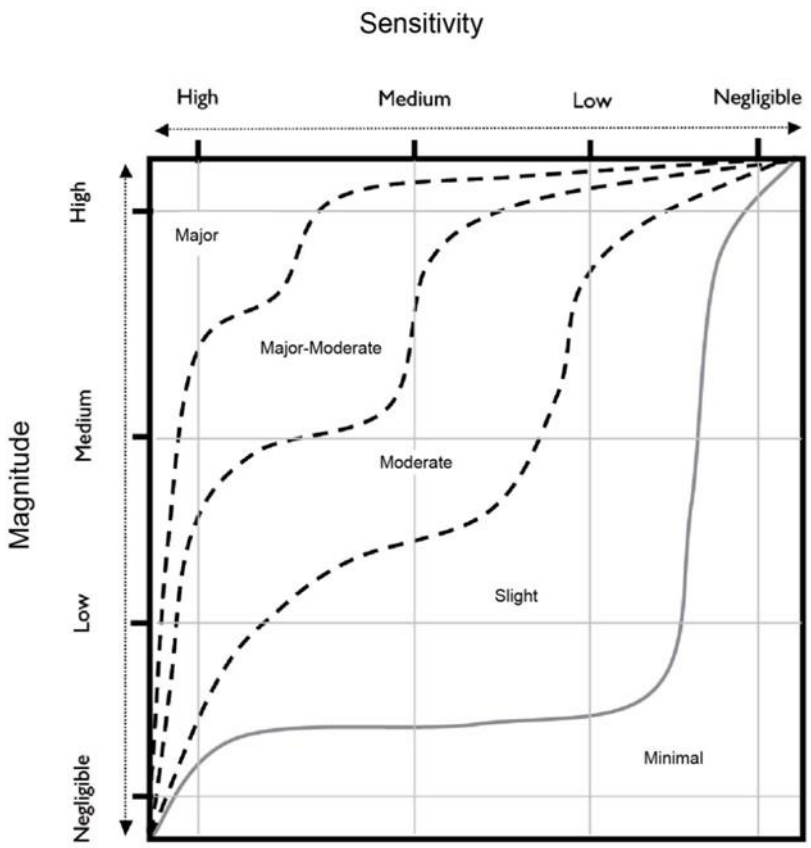
110. As can be seen from the illustration above, scale (shown as the layers of **Diagram 26-1**) is the primary factor in determining magnitude; most of each layer indicates that magnitude will typically be judged to be the same as scale, but may be higher if the effect is particularly widespread and long lasting, or lower if it is constrained in geographic extent or timescale. Where the scale of effect is judged to be negligible the magnitude is also assumed to be negligible and no further judgement is required.

26.4.3.3 Impact Significance

111. Significance indicates the importance or gravity of the effect. The process of forming a judgement as to the degree of significance of the effect is based upon the assessments of magnitude of effects and sensitivity of the receptor to come to a

professional judgement of how important this effect is. This judgement is illustrated by **Diagram 26-2** below:

Diagram 26-2: Definition of Impact Significance



112. The significance ratings indicate a 'sliding scale' of the relative importance of the effect, with major being the most important and minimal being the least. Effects that are major-moderate or major are considered to be significant in EIA terms. Effects of moderate significance or less are *"of lesser concern"* (GLVIA3 (Landscape Institute and IEMA, 2013), para 3.35). It should also be noted that whilst an effect may be significant, that does not necessarily mean that such an impact would be unacceptable or should necessarily be regarded as an *"undue consequence"* (GLVIA3 (Landscape Institute and IEMA, 2013) para 5.40).

113. Where intermediate ratings are given, e.g. *"moderate-slight"*, this indicates an effect that is both less than moderate and more than slight, rather than one which varies across the range. In such cases, the higher rating will always be given first; this does not mean that the impact is closer to that higher rating but is done to facilitate the identification of the more significant impacts within tables. Intermediate judgements may also be used for judgements of magnitude.

26.4.3.3.1 Positive / Neutral / Adverse

114. Effects are defined as positive, neutral or adverse. Neutral effects are those which overall are neither adverse nor positive but may incorporate a combination of both.

115. The decision regarding the significance of effect and the decision regarding whether an effect is positive or adverse are entirely separate. For example, a rating of major and positive would indicate an effect that was of great significance and on balance positive, but not necessarily that the proposals would be extremely beneficial.

116. Whether an effect is positive, neutral or adverse is identified based on professional judgement. GLVIA3 (Landscape Institute and IEMA, 2013) indicates at paragraph 2.15 that this is a *"particularly challenging"* aspect of assessment, particularly in the context of a changing landscape.

26.4.3.3.2 Residential Visual Amenity

117. A residential visual amenity assessment is distinct from an LVIA, as noted in GLVIA3 at paragraph 6.17 (pages 107 and 109), which states: *"Effects of development on private property are frequently dealt with mainly through 'residential amenity assessments'. These are separate from LVIA although visual effects assessment may sometimes be carried out as part of a residential amenity assessment, in which case this will supplement and form part of the normal LVIA for a project…"*

118. The closest residential property to the substation site that has been identified lies west of Gowthorpe Lane, approximately 0.7km west of the substation. It is separated from the site by dense hedgerows and woodland and is unlikely to have views of the substation. Other residential properties lie further from the site, and if views are possible, they would be heavily filtered by existing hedges, trees and woodland.

119. It is considered that the effects resulting from the proposed development would fall well below the Residential Visual Amenity Threshold referred to in LI TGN 02/2019 as visual effects "*of such nature and/or magnitude that it potentially affects 'living conditions' or Residential Amenity*". The guidance note further indicates that "*It is not uncommon for significant adverse effects on views and visual amenity to be experienced by people at their place of residence as a result of introducing a new development into the landscape. In itself this does not necessarily cause particular planning concern. However, there are situations where the effect on the outlook/visual amenity of a residential property is so great that it is not generally considered to be in the public interest to permit such conditions to occur where they did not exist before*."

120. This LVIA does not include a separate residential amenity assessment.

26.4.4 Cumulative Impact Assessment Methodology

121. The CIA considers other plans, projects and activities that may impact cumulatively with SEP and DEP. As part of this process, the assessment considers the following:

- Which of the residual impacts assessed for SEP and/or DEP on their own have the potential to contribute to a cumulative impact; and
- The confidence in the data/information available at the time of assessment to inform the cumulative assessment.

122. **Chapter 5 EIA Methodology** provides further details of the general framework and approach to the CIA.

123. With respect to the LVIA and its CIA, cumulative assessment relates to the assessment of the effects of more than one development. Developments that are subject to a valid planning application are included where specific circumstances indicate there is potential for cumulative effects to occur, with progressively decreasing emphasis placed on those which are less certain to proceed.

124. Operational, and consented developments are treated as being part of the baseline i.e. it is assumed that consented schemes will be built except for occasional exceptions where there is good reason to assume that they will not be constructed.

125. There is the potential for the construction phase of the SEP and/or DEP onshore cable corridor to overlap with the construction of other nearby consented offshore wind farm onshore cable corridors. These schemes will also form part of the CIA.

126. Those cumulative schemes identified as being relevant to this assessment within the study areas of the onshore cable corridor and the onshore substation are set out in **Section 26.7**.

26.4.5 Transboundary Impact Assessment Methodology

127. Transboundary effects have been scoped out of the LVIA since there is no potential for transboundary landscape and visual effects to arise as a result of the construction and operation of the onshore cable corridor or the onshore substation.

26.4.6 Assumptions and Limitations

26.4.6.1 Desk-Study and Fieldwork

128. The baseline environment within the study areas of the onshore cable corridor and the substation site described in the subsequent sections has been informed by desk-study and fieldwork (undertaken between August 2020 and December 2021).

129. The ZTV study (see **Figure 26.15**) has been produced and used as a tool to inform the professional judgements made in this LVIA and during the iterative design process. The ZTV has been modelled on the maximum development parameters available but does not take into account small scale, local screening features such as hedgerows, individual trees or micro topography; or proposed landscape interventions.

26.4.6.2 Potential Night-time Effects and Lighting

130. Lighting during operation would take into account guidance from the Institute of Lighting Professionals – Guidance Note 01/21 for the reduction of obtrusive light (ILP, 2021). Lighting during the onshore construction phase would be temporary, used only when required (and generally limited to certain working hours) and designed to avoid unnecessary illumination. Light spill during out of hours working would be minimised through the use of task-orientated lighting. The operational onshore substation would operate as an unmanned facility, with security and temporary maintenance lighting only to ensure a safe and secure working environment. Light spill from these elements would be minimised through design, in particular the use of directional lighting. Potential night-time effects have been considered in reaching judgements throughout this assessment.

26.4.6.3 Distances

131. Where distances are given in the assessment, these are approximate distances between the nearest part of the site and the nearest part of the receptor in question, unless explicitly stated otherwise.

26.5 Existing Environment

26.5.1 Introduction

132. An overview of the baseline study results is provided in this section with the full baseline description of the individual landscape and visual receptors being provided alongside the assessment in **Section 26.6** for ease of reading.

133. This section identifies those landscape and visual receptors relevant to the onshore cable corridor and onshore substation that merit detailed consideration in the assessment of effects, and those which are 'scoped out' from further assessment as effects *"have been judged unlikely to occur or so insignificant that it is not essential to consider them further"* (GLVIA3 (Landscape Institute and IEMA, 2013), para 3.19).

134. Both this baseline **Section 26.5** and the effects **Section 26.6** describe landscape character, and visual receptors before considering designated landscapes and landscapes protected by policy. It is common for designations and landscapes protected by policy to encompass both character and visual considerations within their special qualities or purposes of designation or protection. It therefore makes a more natural reading sequence to draw together those aspects of character and views which relate to the designation or protection if they have been described earlier in the chapter.

135. The onshore cable corridor and study area extends broadly south from the landfall at Weybourne beach before turning southeast and continuing to where it joins the onshore substation assessed within this chapter, as shown on **Figures 26.1** to **26.6**. The onshore cable corridor study area encompasses a primarily rural area incorporating the coast, and areas of farmland, woodland and small settlements.

136. The onshore substation lies within an area of arable fields enclosed by woodland belts, adjacent to the Norwich Main substation and existing electricity pylons and overhead cables (see **Figure 26.16**). The Norwich to Ipswich railway line runs east of the site and contains electrical overhead power lines. The A140 lies to the east of the railway line. The site lies within a larger area of arable farmland to the north, west and south, with fields typically enclosed by hedgerows, trees and woodland, interspersed with villages. **Figure 26.14** shows that the landform falls into the valley of the River Tas to the east, and further north into the valley of the River Yare south of Norwich. The site is screened from the Tas valley by trees and woodland adjacent to the site and east of the A140, and from the Yare valley.

26.5.2 Zone of Theoretical Visibility (ZTV) study – onshore substation

137. A ZTV study was generated based on the worst-case scenarios for the onshore substation and is presented in **Figure 26.15**.

138. No ZTV has been produced for the onshore cable corridor. As set in **Section 26.3.2**, the greatest potential effects due to the onshore cable corridor on landscape and visual resources would occur during the construction phase of SEP and DEP, which would comprise the temporary activity including trenching and moving construction vehicles/equipment. Upon completion, link boxes will be buried and identified with marker posts as described in **Section 26.3.2**. There would be minimal infrastructure along the route of the operational onshore cable corridor, resulting in little visibility of this onshore component.

139. The ZTV produced for the onshore substation has been used as a tool to inform the professional judgements made in this LVIA. It has supported the assessment in determining which landscape and visual receptors have potential to be significantly affected, and merit further consideration in the assessment of effects in **Section 26.6**.

140. The ZTV has been prepared in accordance with the RWCS, details of which are set out in **Section 26.3.2**. In summary, the following parameters have been modelled for the ZTV:

- The maximum platform level of the onshore substation platform of 28.23m AOD. The Environment Agency 2m LiDAR Digital Terrain Model data has been used for the full site area. The present levels across the site range from approximately 22.67m to 30.65m AOD. The site's position in relation to broad landform is shown on **Figure 26.14**.
- The buildings are modelled at 15m above the platform level at 28.23m AOD. The footprint of the site is modelled up to the maximum potential height of buildings.
- Electrical equipment is modelled at 30m above the platform level. The footprint of the site modelled up to the maximum potential height of electrical equipment. These elements would be the tallest part of the onshore substation, albeit they would have a relatively slender profiled lighting protection rods. Most other electrical equipment would be below the height of the maximum potential building height.

141. The ZTV shown on **Figure 26.15** indicates the areas of potential theoretical visibility for each of the parameters set out above and was carried out using a topographic model that included principal woodland and settlements as visual barriers (derived from NEXTMAP 25 surface mapping data) in order to provide a more realistic indication of potential visibility.

142. The greatest extent of theoretical visibility for the onshore substation extends to the east, south and west up to approximately 4km. Beyond approximately 4km, visibility would become more intermittent where terrain, woodland and settlement influences theoretically visibility to a greater degree.

143. To the north of the onshore substation, theoretical visibility would be largely contained to an area that extends up to approximately 2km in the vicinity of the A47. Beyond 2km, visibility would become more intermittent as a result of the lower terrain within the Yare valley, woodland and built development. The ZTV indicates that there could be a degree of visibility available from the southern edge of Norwich, with little visibility from locations further within the city.

144. The following points should be borne in mind in respect of the ZTV:

- The ZTV represents the theoretical model of the potential visibility of the onshore substation. In reality, landscape features such as small woodlands, trees, hedgerows, embankments, landform and/or buildings found on-the-ground, but not accounted for within the digital model, are likely to combine to screen the onshore substation to a greater degree. As a result, the extent of actual visibility experienced on-the-ground would be less than suggested by the ZTV.
- The ZTV has been modelled on the maximum height parameters across the maximum possible footprint of the onshore substation. In reality, the final onshore substation would not be built out to the maximum height parameter across the entire site footprint, and actual visibility of the constructed scheme is likely to be less than indicated on the ZTV.
- The ZTV only models the highest points of potential electrical equipment and buildings and, as such, this may be all that is visible. This is particularly true of areas near the edges of potential visibility.

26.5.3 ZTV study and Zone of Visual Influence – onshore substation

145. As noted above, the extent of actual visibility experienced on-the-ground of the onshore substation would be less than suggested by the ZTV. Fieldwork, in combination with analysis of aerial photography and terrain data, has established that the extent of actual visibility – the 'Zone of Visual Influence' (ZVI).

146. Fieldwork and desktop analysis has identified that the ZVI of the onshore substation would be contained to its immediate contexts as set out below. The onshore substation site is enclosed by belts of mature trees and woodlands which combine to limit the ZVI to the area shown on **Figure 26.15**; substantial areas of these tree belts are not included in the digital NEXTMAP 25 surface data that is used to generate the ZTV because the data records surface levels at 25m centres, so misses many smaller objects. An aerial photograph with the onshore substation is shown on **Figure 26.16**, illustrating the extent of tree belts and woodlands surrounding the site. Extensive sections of these are not included in the ZTV, hence the much more extensive visibility suggested by the ZTV than the actual ZVI recorded by site assessment. These tree belts and woodlands, combined with layers of other vegetation including scrub, individual trees and numerous hedgerows enclosing fields and roads, restrict the ZVI to this small area.

147. Areas outside of the ZVI would have limited or no visibility of the onshore substation as described below.

148. The description of the ZTV and the ZVI shown on **Figure 26.15** do not take account for proposed mitigation and enhancement planting. Effects of proposed planting (as set out in the **OLMP**, document reference 9.18) would reduce visibility further and is described below and accounted for in the assessment of impacts in **Section 26.6**.

149. Nine representative viewpoints are presented on **Figures 26.17 – 26.25**. Corresponding descriptions of the existing views as set out in **Appendix 26.1 LVIA Annexes**. As agreed with ETG consultees at the outset of the project, no viewpoints have been provided for the onshore cable corridor (see **Section 26.2**).

26.5.3.1 Landscape to the North of the Onshore Substation

150. There is a tall belt of woodland along the northern edges of the field within which the onshore substation is located, and the field to the north-west of the site, which would limit visibility from land north of this woodland, although up to two sections of this woodland would be removed during construction to install a new access road. During operation, the eastern part of the construction access road (between the A140 and the substation) would remain and provide access to the operational substation. The western section of the construction access road would be removed, and the woodland replanted. For this assessment, it is assumed that approximately 10m width of woodland would be permanently removed between the onshore substation and Norwich main substation for the proposed permanent access road.

151. The existing Norwich Main substation and pylons and overhead wires lie within the fields immediately north of this woodland and are prominent in views from the north. Viewpoints 7, 8 and 9 (**Figures 26.23** to **26.25**) lie further away than land immediately north of the site but illustrate how intervening terrain and vegetation would combine to screen the majority of the onshore substation with, at most, views of parts of the electrical equipment possible above the intervening vegetation. These components are likely to be barely perceptible within the context of the wider view.

152. Fieldwork has confirmed that the established woodland belts parallel to the PRoW (Swardeston BR12 and Stoke Holy Cross BR3) (see **Figure 26.19**) would visually contain the onshore substation from the landscape to the north and would form the northern boundary of the ZVI. The existing Norwich Main substation and pylons and overhead wires would be visible in many views from the north, lessening the visual influence of the substation should they be partially visible from any locations north of this woodland.

153. As mitigation and enhancement planting illustrated on **Figure 1** in the **OLMP** (document reference 9.18) matures, lower elements of the onshore substation would be screened in views to a greater degree, although visibility of the taller infrastructure within the substation would partially remain. Views would be possible during the winter months through the leafless vegetation. The photomontage shown on **Figure 26.17** illustrates the degree of potential visibility. The ZVI is unlikely to reduce following establishment of vegetation to the north of the substation.

26.5.3.2 Landscape to the East of the Onshore Substation

154. Fieldwork has shown that the established vegetation (comprising woodland, individual tress, and scrub) along the A140 (Ipswich Road) and within and in close proximity to Dunston Hall golf course (see **Figure 26.16**) would visually contain the onshore substation from the landscape to the east (including the Tas valley). The eastern side of the A140 forms the eastern boundary of the ZVI.

155. Viewpoints 6 and 7 (**Figures 26.22** to **26.23**) show that from locations on the eastern side of the Tas valley, there would be little or no visibility of the onshore substation a result of the screening provided by intervening vegetation. Views at most would be available to tops of the electrical equipment above the intervening vegetation, seen within the context of other (and taller) pylons. It is likely that visibility of these components would be barely perceptible within the context of the wider view.

156. As mitigation and enhancement planting illustrated on **Figure 1** in the **OLMP** (document reference 9.18) matures, lower elements of the onshore substation would become screened in views to a greater degree, although visibility to the taller infrastructure within the substation would be visible above and through the leafless vegetation, as illustrated by the photomontage shown on **Figure 26.18.** The ZVI is unlikely to reduce following establishment of vegetation to the east of the substation.

26.5.3.3 Landscape to the South of the Onshore Substation

157. Fieldwork has shown that the belt of woodland along Hickling Lane/Swainsthorpe BOAT6 (see **Figure 26.16**) would limit visibility of the onshore substation from further south and forms the southern boundary of the ZVI. A line of pylons and overhead wires extends across the landscape and would be visible in many views from the south, lessening the visual influence of the substation should there be partially visibility from any locations south of this woodland.

158. As mitigation and enhancement planting illustrated on **Figure 1** in the **OLMP** (document reference 9.18) matures, lower elements of the onshore substation would be screened in views to a greater degree, although visibility of the taller infrastructure within the substation would partially remain. Views would be possible during the winter months through the leafless vegetation. The ZVI is unlikely to reduce following establishment of vegetation to the south of the substation.

26.5.3.4 Landscape to the West of the Onshore Substation

159. Viewpoints 4 and 5 (**Figures 26.20** to **26.21**) illustrate that from these locations to the west, beyond the immediate context of the onshore substation, there would be little to no visibility of the substation as a result of screening by intervening vegetation. Vegetation within the landscape east of Swardeston and Mulbarton is likely to obscure the onshore substation from these settlements. If any electrical equipment is visible, it would be seen within the context of existing pylons and overhead wires. Additionally, given the anticipated slim profile, typical of lighting protection rods which is likely to constitute the highest electrical equipment, visibility of these components would be barely perceptible within the context of the wider view.

160. Fieldwork has identified that views to the onshore substation would be largely contained to the field south of Gowthorpe Manor and east of Gowthorpe Lane. Gowthorpe Lane, which is lined with hedgerows, would form the western boundary of the ZVI upon completion. As mitigation and enhancement planting illustrated on **Figure 1** in the **OLMP** (document reference 9.18) matures, it is likely that views from the west would be screened further. It is likely that the ZVI would only extend up to the bridleway (Swainsthorpe BR7 – identified on **Figure 26.16**) to the west of the substation following the established of proposed planting.

26.5.3.5 Zone of Visual Influence and Potential Effects

161. Based on fieldwork observations, it is judged that the scale effects due to the onshore substation on landscape and visual receptors outside the ZVI described above would be negligible scale and **minimal significance**. Receptors outside the ZVI are not assessed in further detail in relation to the onshore substation.

26.5.4 Landscape and Seascape Character

162. The onshore cable corridor has potential to affect seascape character at the landfall, and landscape character where it runs across Norfolk. The onshore substation only has the potential to affect landscape character.

26.5.4.1 National Seascape Character Areas

163. A seascape character assessment for the East Inshore and East Offshore Marine Plan areas was published by the Marine Management Organisation in July 2012 (MMO, 2012). Its purpose is to provide a strategic scale seascape character assessment to inform the marine planning process and is based upon an earlier pilot study seascape assessment commissioned by Natural England. The only National Seascape Character Areas (NSCA) that fall within the SEP and DEP's landscape and visual resources study areas is East Midlands Coastal Waters, which falls within the onshore cable corridor study area, as illustrated on **Figures 26.7** and **26.8**. Given the short term and limited extent of the construction activities associated with the onshore cable corridor, there would be no significant effects on seascape character and so effects on this NSCA is not considered further.

164. Landscape Character Map of England (National Character Areas (Natural England, various dates)) identifies broad overarching character at the national level. GLVIA3 (Landscape Institute and IEMA, 2013) notes the purpose of national character area profiles in LVIA is to *"set the scene"* with assessment of specific impacts to character undertaken using local character assessments.

165. **Figure 26.7** shows the National Character Areas (NCA) which are located within the study areas of the onshore cable corridor and the onshore substation. The relevant NCAs which fall within the study areas are as follows:

- NCA77: North Norfolk Coast;
- NCA78: Central North Norfolk;
- NCA84: Mid Norfolk; and
- NCA83: South Norfolk and High Suffolk Claylands.

166. Whilst these NCAs provide context to the assessment, given their scale and the presence of more detailed LCAs at a local level, effects on the NCAs are not assessed in further detail.

26.5.4.2 Regional Character Assessment

26.5.4.2.1 East Of England Landscape Framework (2011)

167. The East of England Landscape Framework (The East of England Landscape Framework, 2011) (EELF) presents an integrated landscape assessment (covering a range of environment matters) across the East of England region. The typologies form a structured spatial framework from which consistent descriptions are documented, drawing from a range of data including local Landscape Character Assessments, Historic Landscape Characterisation, biodiversity, and rural settlement datasets as well as data generated through consultation. Its objective is to provide consistent information across the region to inform future planning

application, climate change studies; biodiversity; land management work; and research studies, where matters related to the land/landscape are considered.

168. Whilst the EEFL provides context to the assessment, given its broad scale and the presence of more detailed character area assessments at a local level, effects on landscape character described in this regional character assessment are not assessed in further detail.

26.5.4.2.2 Norfolk Coast AONB Integrated Landscape Guidelines (2009)

169. The Norfolk Coast AONB Integrated Landscape Guidelines (Norfolk Coast Partnership, 2009) (AONB LCA) describes the distinctive character of the Norfolk Coast AONB; highlights those aspects of the landscape which are valued and particularly vulnerable to change; and provides guidance on appropriate measures and considerations that will help conserve and enhance them, whilst encouraging the sustainable development of the area.

170. The AONB LCA states that it *"…does not seek to override the detailed information contained in each of the district-based landscape character assessment reports; instead it summarises and presents information from the detailed reports in a consistent, user-friendly format which relates to the landscapes of the AONB."*

171. Whilst the AONB LCA provides relevant information about the landscape character with the study areas of the wind farm sites, the North Norfolk Landscape Character Assessment (Land Use Consultants, 2021) provides a more recent character assessment of the area where the two overlap and will be used as the landscape character assessment for impact assessment in **Section 26.6**.

26.5.4.3 Local Character Assessment

26.5.4.3.1 Onshore Cable Corridor

172. Local landscape character and seascape character baseline within SEP and DEP's onshore cable corridor study area are defined by the following assessments:

- Marine Management Organisation Seascape character area assessment: East Inshore and East Offshore marine plan areas (MMO, 2012);
- Norfolk Coast AONB Integrated Landscape Guidance (2009) (Norfolk Coast Partnership 2009);
- North Norfolk Landscape Character Assessment (Land Use Consultants 2021);
- Broadland District Landscape Character Assessment (Broadland District Council 2008, updated 2013);
- Breckland District Landscape Character Assessment (Land Use Consultants 2007); and
- South Norfolk District Landscape Character Assessment 2001 (updated 2006 and 2008) (Land Use Consultants 2001).

173. The North Norfolk Landscape Character Assessment extends to the low water mark. The boundary between seascape and landscape character assessments for the purpose of this LVIA is the low water mark.

174. Given the limited spatial extent of the onshore cable corridor in relation to individual LCAs and the nature of potential effects (i.e. short-term construction activity followed by landscape reinstatement, except where trees and woodlands are removed and cannot be re-planted over the 20m wide cable easement if both Projects are implemented, or 10m if a single Project is implemented (either SEP or DEP)) the only LCAs likely to experience notable effects as a result of the construction of the SEP and DEP onshore cable corridor are those that it passes through. LCAs that lie within the study area for the onshore cable corridor but outside of the corridor itself would experience no direct effects and are therefore excluded from detailed consideration.

175. The onshore cable corridor or study area falls within the following LCAs (listed in order from north to south) and are considered in further detail at **Section 26.6**. LCAs are illustrated on **Figures 26.8** to **26.13**.

26.5.4.3.1.1 North Norfolk Landscape Character Assessment

- CS1. Weybourne to Mundesley Coastal Shelf;
- DCM2. Blakeney, Wiveton, Cley and Salthouse Drained Marshes;
- RHA1. Blakeney, Salthouse & Kelling;
- WGR1. Wooded Glacial Cromer Ridge;
- TF1. North Norfolk Tributary Farmland; and
- RV2. River Bure and tributaries.

26.5.4.3.1.2 Broadland District Landscape Character Assessment

- E1. Blickling and Oulton Wooded Estatelands;
- D1. Cawston Tributary Farmland;
- B1. Horsford Woodland Heath Mosaic;
- A1. River Wensum River Valley; and
- D2. Weston Green Tributary Farmland.

26.5.4.3.1.3 South Norfolk District Landscape Character Assessment

- A3. Tud Rural River Valley;
- G1. Easton Fringe Farmland;
- A2. Yare/Tiffey Rural River Valley;
- B2. Tiffey Tributary Farmland;
- D1. Wymondham Settled Plateau Farmland;
- C1. Yare Tributary Farmland with Parkland;
- B1. Tas Tributary Farmland;
- A1. Tas Rural River Valley; and
- F1. Yare Valley Urban Fringe.

26.5.4.3.2 Onshore Substation

176. The local landscape character baseline within the study areas for the onshore substation is described within a series of reports that comprise the South Norfolk Landscape Assessment (SNLA) (Land Use Consultants 2001).

177. The first report – the South Norfolk Landscape Assessment Volume 1: Landscape Types of South Norfolk District – produced a framework study for the entire district, identifying seven generic landscape character types (LCT), reflecting the subtly varied landscape of the district ranging from the rural river valleys to the plateau farmland.

178. A more detailed study was subsequently undertaken – South Norfolk Landscape Assessment Volume 2: Landscape Character Areas of the Norwich Policy Area – which identified and described the character areas falling within the northern part of the district closest to Norwich, within the policy area defined in the Norfolk Structure Plan 1999. This study subdivided the generic LCTs in unique LCAs.

179. South Norfolk Landscape Assessment Volume 4: Landscape Character Areas of the Rural Policy Area is the final volume of the series covering the remaining part of the district, i.e. the landscape falling within the Rural Policy Area, and complements the study undertaken for Volume 2.

180. The SNLA identifies, maps and describes the generic LCTs and unique LCA across the South Norfolk District. Those which are located within the study area of the onshore substation is shown on **Figure 26.13**, and listed below:

- A1. Tas Rural River Valley;
- B1. Tas Tributary Farmland;
- C1. Yare Tributary Farmland with Parkland;
- D1. Wymondham Settled Plateau Farmland;
- D2. Poringland Settled Plateau Farmland; and
- F1. Yare Valley Urban Fringe.

181. As set out in **Section 26.5.3**, the ZVI of the onshore substation (see **Figure 26.15**) would be visually contained to its immediate context. Only the LCA of B1 Tas Tributary Farmland lies within the ZVI and could be affected to a such a degree that significant effects might arise as a consequence of the onshore substation. This LCA is taken forward for further detailed assessment in **Section 26.6**.

182. Based on fieldwork observations set out in **Section 26.5.3**, potential effects on landscape character outside of the extent of the ZVI would be of a negligible scale, and no significant effects would occur on the following LCAs that lie within the study areas of the substation, and these are not assessed further:

- A1. Tas Rural River Valley;
- C1. Yare Tributary Farmland with Parkland;
- D1. Wymondham Settled Plateau Farmland;
- D2. Poringland Settled Plateau Farmland; and
- F1. Yare Valley Urban Fringe.

26.5.5 Visual Receptors

183. Visual receptors are *"the different groups of people who may experience views of the development"* (GLVIA3, para 6.3). In order to identify those groups who may be significantly affected, ZTV studies, baseline desk study and site visits have been used to inform the professional judgements made in this assessment.

184. The different types of receptors assessed within this chapter encompass local residents; people using key routes such as roads; cycle ways; long distance walking routes; people within accessible or recreational landscapes; people using Public Rights of Way (PRoW); and/or people visiting key viewpoints.

185. Nine representative viewpoints have been selected and agreed with the relevant local authorities and statutory bodies (see **Table 26-1**) to assess the potential effects on visual receptors within the study area of the onshore substation.

186. Visual receptors are assessed under the following categories:

- Settlements;
- Roads and Rail;
- Recreational routes (long distance walking routes and national and regional cycle routes);
- Accessible and recreational landscapes; and
- Visual receptor groups (comprising users of PRoW and local roads).

26.5.5.1 Onshore Cable Corridor

26.5.5.1.1 Settlements

187. Assessment of impacts on people within settlements includes views from the publicly accessible routes, public spaces, homes and businesses within them. The following settlements are located within the onshore cable corridor study area (listed north to south):

- Weybourne;
- Kelling
- Bodham;
- West Beckham;
- Baconsthorpe;
- Plumstead;
- Matlaske;
- Little Barningham;
- Oulton;
- Oulton Street;
- Southgate;
- Cawston;
- Eastgate;

- Brandiston;
- Swannington;
- Alderford;
- Upgate;
- Morton;
- Attlebridge;
- Weston Longville;
- Weston Green;
- Easton;
- Colton;
- Marlingford;
- Barford;
- Great Melton;
- Wramplingham;
- High Green;
- Hethersett;
- Wymondham;
- Ketteringham;
- East Carleton;
- Mulbarton;
- Dunston;
- Swainsthorpe; and
- Swardeston.

188. Of the settlements listed above, Matlaske, Alderford, Colton and High Green all lie largely outside of the onshore cable corridor study area at a distance where construction phase impacts are unlikely to be greater than negligible and as such, they are not considered in further detail in assessing effects of the onshore cable corridor. In addition to the settlements listed above there are other areas of dispersed settlement, such as isolated farms, manor houses and small hamlets, throughout the onshore cable corridor study area which may be referred to in **Section 26.6** as necessary.

26.5.5.1.2 Roads And Rail

189. The following main road and rail routes pass through the onshore cable corridor study area (listed north to south):

- A149 – crosses corridor (**Figure 26.1**);
- North Norfolk Railway – crosses corridor (**Figure 26.1**);

- A148 – crosses corridor (**Figure 26.1**);
- A1067 – crosses corridor (**Figure 26.4**);
- A47 – crosses corridor (**Figure 26.4**);
- A11 – crosses corridor (**Figure 26.5**);
- Rail line between Norwich and Cambridge – crosses corridor (**Figure 26.5**);
- Rail line between Norwich and Ipswich – lies adjacent of DCO Order Limits east of the onshore substation (**Figure 26.6**); and
- A140 – runs east of DCO Order Limits, east of the onshore substation (**Figure 26.6**).

190. These routes are considered in further detail in **Section 26.6**.

26.5.5.1.3 Long Distance Walking Routes

191. The following Long Distance Walking Routes pass through the onshore cable corridor study area (listed north to south) (see **Figures 26.1** to **26.6**):
    - Peddars Way, Norfolk Coast Path and England Coast Path – crosses corridor (**Figure 26.1**);
    - Holt-Mannington Walk – crosses corridor in two locations (**Figure 26.2**);
    - Marriot's Way – crosses corridor in two locations (**Figures 26.3** and **26.4**); and
    - Tas Valley Way – crosses corridor (**Figure 26.6**).
192. These routes are considered in further detail in **Section 26.6**.
193. Peddars Way, Norfolk Coast Path and England Coast Path follow the same route along the Norfolk coast through the study area and are assessed together and are hereafter referred to as the 'Coast Path'. The England Coast Path is a proposed National Trail around all of England's coast which Natural England is establishing under the provisions of Part 9 of the Marine and Coastal Access Act 2009 It includes a wider area of 'coastal margin' either side of the path itself extending from a landward feature to the south and to the low tide level to the north, giving greater statutory protection to the de facto access to the coast the public already enjoys. Some sections are open and others have yet to be implemented.
194. Small lengths of two sections of the England Coast Path and coastal margin defined by Natural England lie within the study area of the onshore cable corridor; Sea Palling to Weybourne and Weybourne to Hunstanton. The only section which lies within the landfall part of the onshore cable corridor is the eastern end of the section from Weybourne to Hunstanton. The section from Sea Palling to Weybourne is open to the public. The section from Weybourne to Hunstanton has not yet been implemented but is likely to be implemented before the wind farm sites would be developed.
195. The coastal margin is considered separately to the Coast Path in **Section 26.5.5.1.5 Accessible And Recreational Landscapes**.

26.5.5.1.4 National And Regional Cycle Routes

196. The following National and Regional Cycle Routes pass through the onshore cable corridor study area (listed north to south):
    - Regional Cycle Route 30 and the Norfolk Coast Cycleway – crosses corridor (**Figure 26.1**);
    - Regional Cycle Route 33 – crosses corridor (**Figure 26.3**); and
    - National Cycle Network Route 1 – crosses corridor (**Figure 26.4**).

197. These routes are considered in further detail in **Section 26.6**.

26.5.5.1.5 Accessible And Recreational Landscapes

198. The following accessible and recreational landscapes are located within the onshore cable corridor study area (listed north to south). This excludes accessible and recreational landscapes within settlements which are included in the assessment on settlements.
    - Weybourne Beach and the existing and future coastal margin – corridor crosses this area (**Figure 26.1** (only showing the section which is existing as described in **Section 26.5.5.1.3**));
    - Fox Hill/Muckleburgh Hill Open Access Land – corridor lies outside (**Figure 26.1**);
    - Kelling Heath Open Access Land – corridor lies outside (**Figure 26.1**);
    - Weybourne Wood National Trust Land always open and Weybourne Wood Open Access Land – corridor crosses this area (**Figure 26.1**);
    - Upper Sheringham Common – corridor lies outside (**Figure 26.1**);
    - Bodham Wood Open Access Land – corridor lies outside (**Figure 26.1**);
    - Barningham Green Farm Common – corridor lies outside (**Figure 26.2**);
    - Cawston Heath - corridor lies outside (**Figure 26.3**);
    - Hengrave Common - corridor lies outside (**Figure 26.3**);
    - Swannigton Common - corridor lies outside (**Figure 26.3**);
    - Alderford Common – corridor lies outside (**Figure 26.3**);
    - Upgate Common - corridor lies outside (**Figure 26.3**);
    - Church Hill Common – corridor lies outside (**Figure 26.4**);
    - Ringland Hills - corridor lies outside (**Figure 26.4**);
    - Mulbaton Common - corridor lies outside (**Figure 26.6**);
    - Dunston Common - corridor lies outside (**Figure 26.6**);
    - Swardeston Common - corridor lies outside (**Figure 26.6**); and
    - Venta Icenorum Roman Town - corridor lies outside (**Figure 26.6**).

199. Of the areas listed above Cawston Heath and Ringland Hills lie largely outside of the onshore cable corridor study area at a distance where construction phase effects

are unlikely to be greater than negligible magnitude and **minimal significance** and as such, they are not considered in further detail in assessing effects of the onshore cable corridor.

200. Bodham Wood, Barningham Green Farm Common, Hengrave Common, Swannigton Common, Alderford Common, Church Hill Common, Mulbaton Common, Dunston Common and Swardeston Common are wooded, or screened from the onshore cable corridor by trees and/or buildings, and from within which construction activity would be screened from view, although glimpsed views might be possible from parts of some of these areas. As a result, visual effects on receptors in these areas are unlikely to be greater than negligible magnitude and **minimal significance** and are not considered further in assessing effects of the onshore cable corridor.

201. The only section of the onshore cable corridor within 1 km of Venta Icenorum Roman Town is a potential access road to the onshore substation which is hidden from Venta Icenorum by woodland and trees. Construction activity associated with the onshore cable corridor is unlikely to be seen from Venta Icenorum and effects would not be significant. As a result, visual effects on receptors in this area of accessible landscape are unlikely to be greater than negligible magnitude and **minimal significance** and are not considered further in assessing effects of the onshore cable corridor.

26.5.5.1.6 Local Roads and Public Rights of Way

202. Local roads and PRoW within settlements are assessed as part of the settlements, all other local roads and PRoW within the onshore cable corridor study area are grouped by parish for ease of reference. The following parishes contain local roads and PRoW that fall within the onshore cable corridor study area (listed north to south) (see **Figures 26.1** to **26.6**):

- Weybourne;
- Upper Sheringham;
- Kelling;
- Bodham;
- West Beckham;
- Baconsthorpe;
- Plumstead;
- Matlaske;
- Little Barningham;
- Wickmere;
- Corpusty and Saxthorpe;
- Itteringham;
- Oulton;
- Heydon;
- Cawston;

- Booton;
- Brandiston;
- Little Witchingham;
- Haveringland;
- Swannington;
- Alderford;
- Attlebridge;
- Morton on the Hill;
- Weston Longville;
- Ringland;
- Honingham;
- Easton;
- Marlingford and Colton;
- Barford;
- Great Melton;
- Wramplingham;
- Wymondham;
- Hethersett;
- Ketteringham;
- East Carleton;
- Swardeston;
- Keswick and Intwood;
- Mulbarton;
- Swainsthorpe;
- Caistor St. Edmund and Bixley;
- Stoke Holy Cross.

203. The parishes of Wickmere, Little Witchingham, Haveringland, Alderford all lie largely outside the onshore cable corridor study area or only have very short sections of routes within it. Overall, visual impacts on local roads and PRoW in these parishes are unlikely to be significant, due to their distance from the onshore cable corridor, intervening vegetation and buildings and very limited extent of routes within the onshore cable corridor study area, they are therefore not considered further in assessing effects of the onshore cable corridor.

26.5.5.1.7 Specific Viewpoints

204. No specifically promoted viewpoints or viewpoints marked on OS maps have been identified within the onshore cable corridor study area.

26.5.5.2 Onshore Substation

205. Visual receptors discussed below can be seen on **Figure 26.6**.

26.5.5.2.1 Settlements

206. Assessment of impacts on people within settlements includes views from all of the publicly accessible routes, public spaces, homes and businesses within them.

207. The following settlements lie within the onshore substation study area:

- Arminghall;
- Bracon Ash;
- Caistor St Edmund;
- Cringleford;
- Dunston;
- East Carleton;
- Keswick;
- Mulbarton;
- Newton Flotman;
- Norwich;
- Shotesham;
- Stoke Holy Cross;
- Poringland;
- Swainsthorpe;
- Swardeston; and
- Upper Stoke.

208. In addition to the settlements listed above, a number of isolated farmsteads and hamlets are distributed across the study area.

209. The ZTV (**Figure 26.15**) indicate that there could theoretically be a degree of visibility of the onshore substation from the peripheries of all of the settlements, and a number of nearby isolated farmsteads/hamlets. However, fieldwork has identified that, as described in **Section 26.5.3**, visibility would not be as widespread as the ZTV theoretically indicates and there would be little or no visibility from any settlements.

210. If the onshore substation is visible from any locations within settlements, it would be mostly screened by intervening vegetation, landform and/or existing development, and be barely perceptible within the context of other man-made infrastructure such as the Norwich Main substation, and pylons and overhead wires, and views would remain fundamentally unchanged. Visual effects would be no greater than a negligible magnitude and **minimal significance**. Therefore, settlements are not assessed in further detail.

26.5.5.2.2 Roads and Rail

211. The following main road and rail routes lie within or pass through the study area of the onshore substation:

- A47 (Norwich southern bypass);
- A140 (Ipswich Road);
- Norwich – Ipswich Railway Line; and
- Norwich – Cambridge Railway Line.

212. The ZTV (**Figure 26.15**) indicates that there could theoretically be visibility of the onshore substation from all of these routes. However, fieldwork has identified that, as described in **Section 26.5.3**, visibility would not be as widespread as the ZTV theoretically indicates and there would be little to no visibility from either the A47 or the Norwich – Cambridge Railway Line. Should views of the onshore substation be possible from either of these routes, it would be mostly screened by intervening vegetation, landform and/or existing development, and be barely perceptible within the context of other man-made infrastructure such as roads, pylons and overhead wires, and views would remain fundamentally unchanged. Visual effects would be no greater than a negligible magnitude and **minimal significance**. Therefore, the A47 and the Norwich – Cambridge Railway Line are not assessed in further detail.

213. Short sections of the A140 and Norwich-Ipswich railway line fall within the ZVI between Hickling Lane and the woodland belt immediately north of the onshore substation. Both routes are well used by people travelling to and from Norwich.

214. Fieldwork has confirmed that from the remainder of each route beyond this small section of the A140 and Norwich-Ipswich Railway Line within the ZVI, views would be obscured by intervening vegetation, development and/or landform. Whilst views to the onshore substation might be possible at breaks in vegetation, it would be glimpsed at most and seen within the context of other man-made infrastructure such as roads, the Norwich Main substation, pylons and overhead wires, and views would remain fundamentally unchanged. Therefore, the assessment of these two routes in **Section 26.6** will focus on the sections of the A140 and Norwich-Ipswich Railway Line within the ZVI.

26.5.5.2.3 Long Distance Walking Routes

215. The following Long Distance walking Routes are located within the onshore substation's study area:

- Tas Valley Way; and
- Boudicca Way.

216. Both routes lie outside the ZVI of the onshore substation.

217. The Tas Valley Way extends broadly south from Norwich, passing to the west of the substation, as it heads towards Bracon Ash and out of the study area. The ZTV (**Figure 26.15**) indicates potential visibility of the onshore substation, albeit intermittently, along parts of its length. In reality this would be considerably reduced as a result of hedgerows and tree belts along its route and other intervening

vegetation in the wider landscape. There would be little to no visibility of the substation from the Tas Valley Way.

218. The Boudicca Way extends broadly south from Norwich, passing east of the substation site. It follows a relatively elevated route past Arminghall and through Upper Stoke with a spur forking west to Venta Icenorum. Viewpoint 7 is located at Venta Icenorum and the wireframe view shown on **Figure 26.23** illustrates that only the upper parts of small sections of electrical infrastructure would potentially be visible. As can be seen in **Table 26-14**, effects are assessed as negligible scale for the onshore substation from Viewpoint 7. The ZTV (**Figure 26.15**) indicates that views of the substation would potentially be possible from parts of the route. However, fieldwork has identified that there would be little potential for there to be views of the substation from the Boudicca Way and that, if they were visible only small parts would be seen, in the context of existing pylons and overhead wires.

219. Visual effects would be no greater than negligible magnitude and **minimal significance** from these routes Therefore, the Tas Valley Way and Boudicca Way are not assessed in further detail.

26.5.5.2.4 National And Regional Cycle Routes

220. No National or Regional Cycle Routes have been identified within the onshore substation's study area.

26.5.5.2.5 Accessible And Recreational Landscapes

221. The following Accessible and Recreational Landscapes are located within the extents of the onshore substation's study area:

- Swardeston Common;
- Eaton Common;
- Venta Icenorum;
- Dunston Common;
- Marston Marshes;
- Mulbarton Common;
- Smockmill Common;
- Shotesham Common; and
- Bracon Common.

222. In addition, there are small areas of Common Land alongside the road in Swainsthorpe, and other small areas of open space within settlements including play areas and recreation grounds.

223. The ZTV (**Figure 26.15**) indicates that there could theoretically be visibility of the onshore substation from these accessible recreational landscapes. However, fieldwork observations have identified that there would be little or no visibility from the landscapes listed above. They all lie outside the ZVI described in **Section 26.5.3**.

224. Should visibility of the onshore substation be possible from any accessible recreational landscapes it would be mostly screened by intervening vegetation,

landform and/or existing development, and be barely perceptible within the context of other man-made infrastructure such as the pylons and overhead wires, and views would remain fundamentally unchanged. Visual effects would be no greater than negligible magnitude and **minimal significance**. Therefore, accessible recreational landscapes are not assessed in further detail.

26.5.5.2.6 Prow, Permissive Bridleway and Gowthorpe Lane Within the ZVI

225. PRoWs, a (presumed) permissive bridleway and Gowthorpe Lane within the immediate context of the onshore substation and within the ZVI set out in **Section 26.5.3** have been grouped together for the purpose of this assessment. Walkers or other visual receptors are likely to use more than one of these routes, for example by undertaking a circular walk along the PRoW that encircle the substation, shown on **Figure 26.16**. The visual receptor group is located within an area of landscape between the established woodland and tree vegetation along the PRoW (Swardeston BR12 and Stoke Holy Cross BR3) (north of the site); the A140 (Ipswich Road) (east of the site); Hickling Lane (south of the site); and Gowthorpe Lane (west of the site).

226. The footpath and bridleway west of A140 was present on the ground in October 2020 but is not recorded on the Definitive Map and Statement of Public Rights of Way for Norfolk (confirmed by Norfolk County Council on 18th December 2020). It is assumed that this is a permissive bridleway for the purpose of this assessment.

227. Fieldwork has identified that a degree of visibility of the onshore substation would be experienced from this group of visual receptors, and they are assessed in more detail in **Section 26.6**.

228. The A140 and Norwich-Ipswich railway line also lie within the ZVI in this area and are assessed separately in **Section 26.6**.

229. No other visual receptors at publicly accessible areas or routes lie within the ZVI.

230. There would be little to no visibility of the onshore substation for users of local roads and PRoW located outside of this visual receptor group as set out in **Section 26.5.3**. Whilst views may be possible, they would be from short sections of roads or PRoWs and of small parts of the substation. Where the substation is visible, it would be seen within the context of other man-made infrastructure such as the Norwich Main substation, pylons and overhead wires, and views would remain fundamentally unchanged. Overall, effects on visual receptors outside the receptor group identified above would be no greater than negligible magnitude and **minimal significance**, and they are not assessed further.

26.5.5.2.7 Specific Viewpoints

231. No specific viewpoints or specifically promoted viewpoints marked on OS maps have been identified within the extent of the onshore substation's study area.

26.5.6 Designated and Defined Landscapes

26.5.6.1 Norfolk Coast AONB

232. The Norfolk Coast AONB is a landscape of national importance with the primary purpose to conserve and enhance the natural beauty of the landscape. The onshore cable corridor runs through the Norfolk Coast AONB for approximately 4.8km as shown on **Figure 26.1**. Effects due to the construction of the onshore cable corridor on the Norfolk Coast AONB are assessed in **Section 26.6.2.3.1**.

26.5.6.2 North Norfolk Heritage Coast

233. As shown on **Figure 26.1** an area of Heritage Coast (The NNHC) is located within the study area of the onshore cable corridor landfall. The Heritage Coast lies approximately 0.6km west of the onshore cable corridor on the coast. Avoiding direct impacts to the NNHC formed a key consideration in the site selection process for the landfall location.

234. The NNHC is a non-statutory landscape definition (although recognised in the statutory planning system), which was defined by agreement between local authorities and the Countryside Commission (now part of Natural England) in 1975, recognising this section of coastline as one of the finest stretches of undeveloped coast in England and Wales.

235. Effects due to the construction of the onshore cable corridor on the NNHC are assessed in **Section 26.6.2.3.2**.

26.5.7 Landscapes or Features Protected by Policy

236. The following areas of landscape or road approaches lie within the onshore substation study area and are protected by policy contained with the South Norfolk Local Plan Development Management Policies Document (October 2015):

- River Valleys (Policy DM 4.5 – Landscape Character and River Valleys);
- Norwich Southern Bypass Landscape Protection Zone (Policy DM 4.6 – Landscape Setting of Norwich);
- Key Viewing Cones (Policy DM 4.6 – Landscape Setting of Norwich); and
- Undeveloped Approaches (Policy DM 4.6 – Landscape Setting of Norwich).

26.5.7.1 Policy DM 4.5 Landscape Character and River Valleys

237. The Rural River Valleys and the Valley Urban Fringe landscapes referred to in this policy lie within the study areas as follows.

26.5.7.1.1 Onshore Cable Corridor

238. The onshore cable corridor crosses South Norfolk District A2 Yare/Tiffey Rural River Valley and passes within approximately 80m of LCA A3 Tud Rural River Valley (**Figures 26.11** and **26.12**) which are referred to in Policy DM 4.5 (**Figures 26.4** and **26.5**). LCA A1 Tas Rural River Valley lies within the onshore cable corridor study area (**Figures 26.6** and **26.13**) but cable corridor construction work is unlikely to be

visible from this LCA due to tree and woodland vegetation within the western edge of the LCA screening views, and the construction work would not adversely affect the "*distinctive characteristics or special qualities*" noted in Policy DM 4.5.

239. Potential effects on these LCAs referred to by Policy DM 4.5 are assessed in **Section 26.6.2.3.3**.

26.5.7.1.2 Onshore Substation

240. South Norfolk District LCAs A1 Tas Rural River Valley and F1 Yare Valley Urban Fringe which are referred to in Policy DM 4.5 lie within the study area of the onshore substation (**Figures 26.13** and **26.6**). As set out in **Section 26.5.4.3**, the relevant LCAs are unlikely to experience any notable landscape effects as a result of the onshore substation, and in turn, it is unlikely that the onshore substation would adversely affect the *"distinctive characteristics or special qualities"* noted in Policy DM 4.5.

241. **Figure 26.6** indicates that the River Valley area extends a few metres west of the A140 into the field east of the railway and would be within the ZVI described in **Section 26.5.3**, potentially affecting LCA A1 Tas Rural River Valley. The Geographic Information System (GIS) data for the River Valleys was supplied by South Norfolk District Council. However, the area of the River Valley extending west of the A140 partly across the triangular field east of substation does not accurately reflect wording set out in the landscape character assessment SNLA (LUC, 2001). The SNLA states in relation to the LCA A1 Tas Rural River Valley that its boundaries in this area are as follows:

242. *"… The boundaries are defined topographically, in relation to the top of the valley sides and roughly follow the 30m contour, except where human influences have caused a distinct change in character. For example, in the lower part of the valley the A140 defines the boundary on the west side as the road creates a clear division on the upper valley side."* (Underlining emphasis added.)

243. This wording identifies that where the River Valley is shown to extend west of the A140 this is incorrect and should be aligned to the A140. The road provides the logical boundary between LCA A1 Tas Rural River Valley east of the A140 and LCA B1 Tas Tributary Farmland west of the A140 (see **Figure 26.13**). The whole triangular arable field lies within B1 Tas Tributary Farmland and reflects the character of this LCA.

244. On this basis, it is assessed in accordance with the conclusions of the baseline study undertaken for local landscape character in **Section 26.5.4.3**, that the River Valley landscape would not experience any notable effects as a result of the substation.

245. Even if the River Valley character area were to extend to the west of the A140 within the area indicated on **Figure 26.6**, there would be no direct changes to this field. The substation would be visible to the west of the railway line from within this field, but this would only indirectly affect a very limited extent of the River Valley landscape and no significant effects would arise as a consequence of SEP and/or DEP. Impacts would be at most of **minimal significance** and **neutral**.

246. Therefore, the River Valley landscapes referred to in Policy DM 4.5 are not considered in further detail.

26.5.7.2 Policy DM 4.6 Landscape Setting of Norwich

247. Policy DM 4.6 sets out policy to protect the openness of a zone around the Southern Bypass, avoid undermining the rural character of undeveloped approaches to Norwich and specific 'Key Views' of the city. The Norwich Southern Bypass Landscape Protection Zone (NSPLPZ), Key Viewing Cones and Undeveloped Approaches which are protected by Policy DM 4.6 are shown on **Figure 26.6**.

248. Policy DM 4.6 is primarily a spatial planning or land use policy which is not intended to protect the inherent qualities of the landscape itself, but to protect landscape from the encroachment of new development. Given the locations of the onshore substation, the NSPLPZ, the Key Viewing Cones and Undeveloped Approaches being located outside of the ZVI, no effects would arise as a consequence of SEP and/or DEP. They are therefore not considered in further detail.

26.5.8 Local Landscape Value

249. Within the study areas of the onshore cable corridor and the onshore substation there are a number of designations, features and other factors that contribute to the value of the local landscape, such as the Norfolk Coast AONB, NNHC, the PRoW network, long distance walking routes, cycle routes, accessible and recreational landscapes, and the popularity of the Norfolk coast as a tourist destination.

250. The Norfolk Coast AONB and NNHC encompass part of the landscape within the study area of the onshore cable corridor. These landscapes are nationally designated or defined and afforded legislative protection. They are assessed to be of national value. They broadly correspond with coastal areas popular with tourists.

251. The River Valley landscapes referred to in Policy DM 4.5 are local/district value.

252. Outside of the designated and defined landscapes, there are numerous landscape features which are valued by the local community. Where none of these assets are considered to demonstrate that the landscape is more valued beyond the local community the value, the value of the landscape is community value.

26.5.9 Climate Change and Natural Trends

253. The existing environment of the landscape in the study areas of the onshore cable corridor and substation is likely to change in the future as a result of the effects of climate change, land use policy, environmental improvements and development pressures, regardless of whether SEP and/or DEP wind farms progress to construction or not.

254. A range of policies impact on the management of the landscape, ranging from national policy and regulation, through to community strategies and development frameworks. Landscape policies protecting designated landscapes generally seek to conserve and enhance the natural beauty of the area, or conserve the character of the landscape, while recognising the need to adapt to inevitable change over time, particularly in a dynamic coastal landscape shaped by coastal processes, and the need to respond to development pressures that reflect the changing needs of society.

255. There is overwhelming evidence that global climate change, influenced by the human use of fossil fuels, raw materials and intensive agriculture, is occurring. Any

notable change in climate is likely to present potential changes to the study areas in a variety of ways.

256. Potential changes to the landscape as a result of climate change and natural trends have been considered but would not change the assessment of impacts presented in this chapter.

26.5.10 Data Limitations

257. Currently there is no known limitation in the data that has informed this chapter.

26.6 Potential Impacts

26.6.1 Introduction

258. This section sets out the effects that the proposed onshore cable corridor and onshore substation would have on landscape and visual receptors.

259. The RWCS is assessed in this section as described in **Section 26.3.2**. The RWCS construction scenario is if both Projects are constructed sequentially with the largest potential gap between the start of construction of the first Project and the start of construction of the second Project. Should SEP and/or DEP be developed in isolation or together (either concurrently or sequentially), it has been assessed there would be no material difference in the resultant impacts between the various Project scenarios. This therefore keep the chapter proportionate by only presenting its assessment of the RWCS.

260. The assessment set out in this section is based on a 'mitigation by design' approach, as set out in **Section 38**. This means that during the course of the preliminary design development of the onshore components for SEP and/or DEP, landscape considerations have been accounted for as an integral part of the design process.

261. It is therefore important to note that appropriate landscape mitigation measures required to reduce the effect of the Proposed Development on landscape character and views have already been incorporated into the design of the project and the assessment of effects, and it is assumed that this mitigation forms part of the final design. No further mitigation measures are proposed, and as such, the residual effects will be the same as those described for long term effects of SEP and/or DEP.

262. Key embedded mitigation measures, as set out in **Section 38**, include burying and routing the onshore cable corridors to avoid visual intrusion and sensitive landscape resources and receptors. Site selection was key in choosing the final location of the onshore substation site to avoid visual intrusion (in so far as possible).

263. All identified effects included within this section are summarised in **Table 26-20** in **Section 26.12**.

264. The principal landscape and visual effects for each onshore component (i.e. cable corridor and substation) would occur during different phases of the SEP and DEP as described below.

26.6.1.1 Onshore Cable Corridor

265. As noted in **Table 26-1** the Scoping Opinion from PINS (The Planning Inspectorate 2019) states that *"… the Inspectorate considers visual effects from the onshore*

cable route (including the landfall) during operation are unlikely to be significant and can be scoped out of the assessment. However, the ES should assess any likely significant long-term landscape effects that could persist from landfall and cable construction activities; for example as a result of any vegetation clearance. This should take into account the effectiveness of any proposed mitigation measures."

266. Effects from the onshore cable corridor are therefore only assessed for the construction phase as set out in **Section 26.3.2.1**.

267. Effects arising as a consequence of SEP and/or DEP would be short-term, temporary and reversible i.e. landscape features would be reinstated following completion of construction activities, with replacement planting implemented during the first planting season following completion of construction, except for tree/woodland removal which would not be re-planted within the 20m wide cable (SEP and DEP concurrently or sequentially) or 10m (SEP or DEP in isolation) easement.

26.6.1.2 Onshore Substation

268. For the onshore substation, the principal effects would occur during the 40 year operational lifetime of SEP and/or DEP, or 34 year operational lifetime if both projects are constructed sequentially with the largest potential gap between the commissioning of each project and are reversible. At the end of the lifespans of SEP and/or DEP, the onshore substation would be decommissioned, and the site restored to its existing condition.

269. The construction and decommissioning of the onshore substation would be temporary activities involving the movement of vehicles to transport materials and undertake earthworks; and the use of cranes to erect or dismantle the development. Construction and decommissioning effects are assumed to be similar.

270. The only landscape receptors likely to experience construction and decommissioning effects that are markedly different to the operational effects would be within the extent of the onshore substation itself and its localities. Within these areas, during these phases, the character of the landscape would be influenced by the construction/decommissioning activities.

271. With regards to potential effects on visual receptors during construction and decommissioning, visibility of the plant movements, crane operations, and the construction or dismantling of the substation and its associated equipment would be experienced by people at nearby publicly accessible locations. These potential effects would be different in nature to those experienced while the onshore substation is in operation, albeit similar or lower (due to shorter duration) in terms of its magnitude and significance.

272. Given the temporary duration of the construction and decommissioning phases compared to the longer-term duration of the operational phases of SEP and/or DEP, potential effects during construction and decommissioning would not be greater than those experienced during the operation of the onshore substation and are likely to be less due to the shorter-term duration.

273. Therefore, in order to keep the chapter proportionate and present where the greatest potential effects would arise, the assessment will only describe in detail the operational phase impacts of the onshore substation of SEP and/or DEP as set out

in **Section 26.3.2**. A summary of the effects that would arise during construction and decommissioning is presented in **Appendix 26.1 LVIA Annexes**.

274. Those effects identified for the operational phases of SEP and/or DEP would extend beyond the duration 'long-term' described in the methodology of this assessment and is defined in the methodology as 'permanent' (**Section 26.4**). However, the onshore substation would be temporary and would be removed after the proposed operating life of up to 44 years. Operational effects would thus extend beyond being 'long-term' (defined as up to 25 years) but not be permanent.

275. Design measures including planting to integrate the onshore substation into its landscape context and reduce the impacts on landscape and visual receptors have been incorporated throughout design development of the final onshore substation. Landscape proposals are set out in the **OLMP** (document reference 9.18) that has been submitted as part of the DCO application. Proposed mitigation measures (such a new planting and habitats) are considered as part the assessment of potential effects. Photomontages have been provided from each of the representative viewpoints captured in support of the LVIA (see **Figures 26.17 – 26.25**). Each view visualises the onshore substation, illustrating the likely views upon completion ('Year 1') and following the establishment of the landscape proposals after 15 years ('Year 15'). The rate of growth of the proposed planting seen within the photomontages assumes that the planting conditions are as expected; the management regime of the **OLMP** (document reference 9.18) is adhered too; and the new vegetation would grow, on average, at approximately 0.45m per annum.

26.6.2 Potential Impacts During Construction – Onshore Cable Corridor

26.6.2.1 Effects on Landscape Character

276. The 60m – 100m wide onshore cable corridor passes through a series of landscapes that can be broadly categorised as rural. Typically, they comprise extensive areas of farmland with fields enclosed by hedgerows and tree belts in varying proportions and frequently there are small to medium size blocks of woodland and some areas of heathland. Settlement is typically small to medium sized villages and there are frequently isolated houses and farms. There are larger areas of woodland south of Weybourne within the northern end of the onshore cable corridor study area. River valley LCTs occur within each district crossed by the onshore cable corridor.

26.6.2.1.1 Sensitivity

277. The NNDC Landscape Sensitivity Assessment (NNDC, January 2021) was adopted on 1 February 2021. The Landscape Sensitivity Assessment states that it has become an important tool for informing the management of landscape change, by assessing and mapping the relative sensitivity of different landscapes to different types of change, based on an understanding of susceptibility and value (paragraph 1.7). The assessment focuses on the landscape sensitivity of LCTs to renewable and low carbon energy developments. Of relevance to this chapter is the assessment of sensitivity of LCTs to onshore underground cable corridors for offshore wind farms.

278. The onshore cable corridor would run through the following North Norfolk LCAs (from north to south) which lie within LCTs which are assessed as having the following sensitivity to onshore cable corridor by the Landscape Sensitivity Assessment (NNDC, January 2021):

- CS1. Weybourne to Mundesley Coastal Shelf (within AONB). Medium-High sensitivity.
- WGR1. Wooded Glacial Cromer Ridge (within AONB). High sensitivity.
- TF1. North Norfolk Tributary Farmland (all but a very small area outside AONB). Medium sensitivity.
- RV2. River Bure and tributaries (outside AONB). Medium-High sensitivity.

279. The above sensitivity ratings are used for the purpose of this assessment.

280. LCA RV2 River Bure and tributaries lies within LCT River Valleys. The similarities between River Valley LCTs across North Norfolk, Broadland and South Norfolk districts suggest that they should all be considered of equivalent sensitivity for the purpose of this assessment (medium-high).

281. There are no similar landscape sensitivity assessments within Broadland or South Norfolk. The sensitivity of other LCAs within Broadland and South Norfolk are assessed following the method presented in **Section 26.4**, based on landscape value and susceptibility to SEP and/or DEP.

282. The value of the other LCAs crossed by the onshore cable corridor within Broadland and South Norfolk Districts varies. None of them lie within nationally designated or defined landscapes such as the North Norfolk AONB or NNHC covering parts of North Norfolk District. There is no further documentary evidence to suggest that other LCAs or LCTs within the onshore cable corridor study area are of increased value and these are considered to be community value.

283. LCAs within Broadland and South Norfolk districts outside the River Valleys LCAs are deemed to range from medium to low susceptibility to SEP and/or DEP, are of community value and range from medium-low to low sensitivity.

26.6.2.1.2 Assessment

284. As noted at **Section 26.5** only those character areas within the onshore cable corridor itself would potentially experience notable impacts on landscape character. These would be direct as a result of temporary construction activity, involving the excavation of cable trenches and HDD works; the removal of short sections of hedgerow (e.g. within the 20m wide open cut crossing if both Projects are constructed, or 12m wide open cut crossing if only one Project (either SEP or DEP) is constructed) and some individual or small groups of trees and areas of woodland; and the operation of the main compound near Attlebridge. Although occurring as part of SEP and/or DEP, some of these activities are not dissimilar in nature to other 'normal', short-term activities that may occur at any time in any landscape (e.g. temporary road and other construction works, tree, hedgerow and woodland management, cultivation of farmland).

285. All significant woodlands, including Weybourne Wood within the Norfolk Coast AONB (with the exception of localised removal of vegetation at the HDD launch and

reception pit and access routes), and many smaller woodlands and areas of trees and scrub would be retained where they lie within the cable corridor, by utilising trenchless crossing techniques, as described in **Section 45**.

26.6.2.1.2.1 Duration, Extent and Scale of Impact

286. As described in **Section 26.3.2.1.1**, the RWCS would see construction activity with a typical works duration of four to twelve weeks at any particular location (approximately four to five months at the landfall for HDD and duct installation; and a further two to four months for the cable pull dependent on the Project scenario) so the impact would be temporary short-term duration and reversible i.e. landscape features would be reinstated following completion of construction activities, except for replacing trees over the cable easements. The RWCS would also see the presence of the main compound area near Attlebridge, which would be in operation for the duration of the construction phases (approximately 24 to 48 months dependant on the Project scenario). Whilst visible for longer than other construction activities along the cable corridor, impacts would be temporary and reversible; and would be experienced to a similar extent to other construction activity along the onshore cable corridor. The scale of impact would be similar to those arising from the installation of the onshore cables.

287. As described in **Section 45**, replacement planting would be implemented during the first planting season following completion of the construction works, except for tree/woodland removal which would not be re-planted within the 20m (both Projects); or 10m (single Project) easement. Gaps in hedges with new planting would be visible for a number of years following completion of construction (medium-term duration) until planting matures.

288. Where trees or woodland have been removed and not re-planted, effects would be permanent. Where this occurs an alternative appropriate land-use would be proposed subject to agreement with the landowners, such as habitat creation or agriculture. This permanent change would have limited effects on landscape character in the context of the extensive existing woodland and trees within the landscape.

289. Under the sequential scenario, the temporary impacts described above would occur twice, although existing trees within the 60m wide working corridor would have already been removed during construction of the first Project and fewer or no trees would need to be removed for construction of the second Project. Effects are assessed for the sequential scenario (realistic worst-case), although construction of a single Project only would not result in impacts of notably different magnitude.

290. The impact of construction lighting on landscape receptors would generally be limited to those areas where artificial light is not currently present at night (i.e. away from settlements, street lighting, busy roads and other artificial light sources). Impacts would typically only occur during periods where working hours extend beyond the hours of daylight (e.g. autumn/winter) and only for a few hours each day. Where HDD crossings are proposed, 24-hour working might be required from its commencement until the completion of each duct installation to ensure that the risk of the boreholes collapsing is minimised. This, in a RWCS, would be a maximum of seven weeks for each Project or twelve weeks if the Projects are constructed

concurrently or sequentially. These impacts would be temporary due to construction works progressing along the route of the onshore cable corridor.

291. The effects on landscape character would be of limited spatial extent of each LCA that the onshore cable corridor passes through, and up to medium-small scale during peak construction works at a particular location where areas of mature woodland are removed, and up to small scale elsewhere.

292. The highest sensitivity LCAs (within the AONB and the River Valley LCTs) range from high to medium-high sensitivity. The effects would be up to low-negligible magnitude and **moderate-slight significance** at the locations where some areas of woodland or groups of mature trees are removed and not re-planted, reducing to negligible magnitude and **minimal significance** outside these areas. Where effects occur, they would be **adverse**.

293. The LCAs outside the AONB and River Valleys range from medium to medium-low sensitivity. The effects would be up to low-negligible magnitude and slight-negligible significance at the locations where some areas of woodland or groups of mature trees are removed and not re-planted, reducing to negligible magnitude and **minimal significance** outside these areas. Where effects occur, they would be **adverse**.

294. The effects would be negligible magnitude and **minimal significance** for the majority of the landscape of the LCAs. Overall impacts on all LCAs would be negligible magnitude and **minimal significance** and **neutral**.

26.6.2.2 Effects on Visual Receptors

26.6.2.2.1 Duration Of Effect on Visual Receptors

295. Similar to described for effects on landscape character in **Section 26.6.2.1**, the RWCS would see construction activity with a typical works duration of four to twelve weeks at any particular location (approximately four to five months at the landfall for HDD and duct installation; and a further two to five months for the cable pull dependent on the Project scenario) so the effects would be temporary short-term duration and reversible i.e. landscape features would be reinstated following completion of construction activities. With regard to the main compound near Attlebridge, which would be in operation for the duration of the construction phases, whilst visible for longer than other construction activities along the cable corridor, impacts would be temporary and reversible; and would be experienced to a similar extent to other construction activity along the onshore cable corridor.

296. Replacement planting would be implemented during the first planting season following completion of construction works, except for tree/woodland removal which would not be re-planted within the 20m (both Projects); or 10m (single Project) easement described in **Section 26.3.2.6**. Gaps in hedges with new planting would be visible for a number of years following completion of construction (medium-term duration) until planting matures.

297. Under the sequential scenario, the temporary impacts described above would occur twice, although would not result in impacts of notably different magnitude.

26.6.2.2.2 Settlements

298. The sensitivity of visual receptors within settlements is high-medium.

299. A total of 36 settlements have been identified within the onshore cable corridor study area of which four have been excluded from further consideration due to likely negligible effect, as detailed at **Section 26.5.5.1.1**. The magnitude of effect on visual receptors within the remaining 32 settlements would vary with those closest to the onshore cable corridor generally experiencing the greatest effects and those more distant experiencing effects of lesser magnitude.

300. The proposed onshore cable corridor does not pass directly through any settlements although it does run within approximately 100m of eight of the identified settlements, and these are the settlements where the greatest impacts could potentially occur (Weybourne, Bodham, Little Barningham, Swannington, Attlebridge, Barford, Ketteringham, and Swardston). Impacts would arise from the introduction of construction activities (excavations, temporary work lighting, individual tree felling, hedgerow removal etc.) into views that presently, in the most part, look out across open fields adjacent to the settlements. At Attlebridge, visibility of the main compound (which is located beyond the settlement's extent) would also be possible for the duration of the onshore construction works. No substantial areas of mature woodland have potential to be removed adjacent to settlements.

301. Views would tend to be limited to the periphery of nearby settlements, on the sides closest to the onshore cable corridor, and would often be partially obscured by buildings and/or vegetation. These may include views of excavators, other heavy plant and HGV's, temporary compounds and storage areas and HDD compounds. Further within settlements it is likely that views of construction works would be completely obscured. At Attlebridge, views would similarly be limited to the periphery of the settlement and partially screened by buildings and/or vegetation, visibility would be possible to main compound from the approaches to the settlement, namely along Felthorpe Road and Fakenham Road as they approach the settlement.

302. Beyond this, in settlements more distant from the onshore cable corridor and main compound, the potential for views and therefore the magnitude of effect would rapidly diminish as the layering of vegetation within the flat or gently undulating landscape interrupts views of construction activities. The scale of effects would vary depending on the exact nature of views available from individual settlements although beyond approximately 200m effects are likely to be negligible scale and magnitude, and **minimal significance**.

303. The most affected settlements would be those smaller settlements where construction activity and/or the main compound could potentially be seen from a wider extent, or those where the onshore cable corridor passes very close to part of the settlement. In this case, effects may be large scale but only experienced in very localised areas over a relatively short period of time with the wider settlement relatively unaffected.

304. Construction lighting is likely to have limited effect on settlements due to the existing presence of artificial light sources. Lighting may be more notable where settlements are particularly small or where street lighting is limited. Effects would typically occur during periods where working hours extend beyond the hours of daylight (e.g.

autumn/winter) and only for a few hours each day. Where HDD crossings are proposed, 24-hour working might be required from its commencement until the completion of each duct installation to ensure that the risk of the boreholes collapsing is minimised. This, in a RWCS, would be a maximum of seven weeks for each Project or twelve weeks if the Projects are constructed concurrently. The effects on visual receptors within settlements during construction would be of up to localised spatial extent, up to large-medium scale during peak construction works at a particular location, temporary short-term duration and reversible. Gaps in hedges would be visible from some locations; any visual effects due to this would be very minor and, after re-planting, reduce over time as plants mature (medium-term i.e. 2 -10 years). The magnitude would range from medium-low at settlements where the construction works would be most visible, through to negligible on settlements where views of the construction work, and hedge gaps would be very limited or non-existent.

305. Overall, the magnitude of the effect would range from medium-low to negligible. The effects on settlements would range from **moderate significance** and **adverse**, at the most affected settlements, to **minimal significance**.

26.6.2.2.3 A-Roads and Rail

306. Users of the A-roads (except the A149) are judged to be of a low sensitivity (low susceptibility and limited value). However, the A149 (the main road along the north Norfolk coast) runs through the Norfolk Coast AONB and is well used by and tourists as well as local people and is judged to be of a medium sensitivity.

307. Train passengers are judged to be of a medium sensitivity (medium susceptibility and community value) as receptors are afforded the opportunity to appreciate views to the landscape through which they are travelling.

308. In the case of people travelling by car on A-roads or train, views of construction activities would tend to be very brief in relation to journey time, seen as the onshore cable corridor is passed, usually at speed. These roads and railway lines would be crossed by trenchless techniques, with roadside hedgerows and other vegetation retained for the majority of HDD crossings. The magnitude of effects on these receptors would be negligible due to the brief, and temporary short-term changes to views. Impacts would be of **minimal significance** and **neutral**.

26.6.2.2.4 Recreational Routes (Long Distance Walking Routes and National and Regional Cycle Routes)

309. Users of the Coast Path (a National Trail) which runs through the Norfolk Coast AONB are judged to be of high sensitivity (high susceptibility and national value). They are of high susceptibility because people have the time and inclination to enjoy the view and they have potential to be directly affected by the construction works.

310. Users of other long distance walking routes are judged to be of high-medium sensitivity (high susceptibility and local/district value).

311. Users of cycle routes are judged to be of medium sensitivity (medium susceptibility and local/district value).

312. A total of nine recreational routes would be crossed by the onshore cable corridor. These comprise:

- The Coast Path (Peddars Way, Norfolk Coast Path and England Coast Path) – crosses corridor (**Figure 26.1**). Crossed by HDD.
- Holt-Mannington Walk – crosses corridor in two locations (**Figure 26.2**). Crossed by open-cut trenching.
- Marriot's Way – crosses corridor in two locations (**Figures 26.3** and **26.4**). Northern crossing crossed by open-cut trenching. Southern crossing crossed by HDD.
- Tas Valley Way – crosses corridor (**Figure 26.6**). Crossed by HDD.
- Regional Cycle Route 30 and the Norfolk Coast Cycleway – crosses corridor (**Figure 26.1**). Crossed by open-cut trenching.
- Regional Cycle Route 33 – crosses corridor (**Figure 26.3**). Crossed by open-cut trenching.
- National Cycle Network Route 1 – crosses corridor (**Figure 26.4**). Crossed by HDD.

313. Those travelling by foot or cycle would generally experience views of construction while they pass the works at a particular location and may be diverted temporarily for short periods during construction. Impacts would primarily arise from the introduction of construction activity, and sometimes temporary construction or HDD compounds, into views at close proximity to each of the routes. These would be seen over short sections of these routes. Some offshore activity associated with the landfall and works in the intertidal zone would also be visible from the Coast Path.

314. The Holt-Mannington Walk and Marriot's Way are crossed by the onshore cable corridor at two locations. The southern crossing of Marriot's Way, which is also the route of National Cycle Network Route 1, which passes along a disused railway line lined with trees and scrub would be crossed by HDD, retaining the path and vegetation. The other three crossings would be crossed by open-cut trenching. Due to construction activity progressing along the onshore cable corridor, the crossings might be made successively so users of the routes would experience views of construction activities for a longer period of time. The total duration for the construction works at crossings of each route across SEP and DEP if constructed separately would, however, remain temporary short term. There would be longer-term and potentially permanent effects due to vegetation removal, but these changes would affect very short parts of longer journeys on foot or bicycle.

315. Impacts associated with construction lighting would typically occur during periods where core working hours extend beyond the hours of daylight (e.g. autumn/winter), which would be for a few hours each day. Where HDD crossings are proposed, 24-hour working might be required from its commencement until the completion of each duct installation to ensure that the risk of the boreholes collapsing is minimised. This, in a RWCS, would be a maximum of seven weeks for each Projects or twelve weeks if the Projects are constructed concurrently.

316. Furthermore, it is noted that when this does occur, it is likely that other existing uses will already be creating artificial illumination (e.g. vehicles and street lighting) which minimises the effect of construction activities. The impact of construction lighting may be more notable for users of unlit walking routes and cycle routes, although these are likely to see less use during hours of darkness and limited to only a few locations.

317. The overall impacts on visual receptors using these recreational routes within the onshore cable corridor study area would be of limited spatial extent, up to large scale during peak construction works at a particular location, temporary short-term duration and would be reversible. Gaps in hedges would be visible from some locations; any visual effects due to this would be very minor and reduce over time as planting matures (medium-term). Where trees and woodlands are removed and not re-planted (permanent) within sight of these routes these changes would affect short parts of longer journeys. It is unlikely that removal of trees or hedges would be visible from the Coast Path (therefore no medium or longer-term effects are anticipated). The magnitude of effect would be up to medium-low.

318. Overall, for users of the Coast Path, the sensitivity of the receptor is high and the magnitude of the effect would be medium-low. Impacts would be of **moderate significance** and **adverse**.

319. Overall, for users of other long distance walking routes, the sensitivity of the receptor is high-medium, and the magnitude of the effect would be medium-low. Impacts would be of **moderate significance** and **adverse**.

320. Overall, for users of cycle routes, the sensitivity of the receptor is medium, and the magnitude of the effect would be medium-low. Impacts would be of **slight significance** and **adverse**.

26.6.2.2.5 Accessible and Recreational Landscapes

321. Six accessible and recreational landscapes have been identified, at **Section 26.5.5.1.5** as having the potential to experience significant effects as a result of the construction activities associated with the onshore cable corridor:

- Weybourne Beach and the future coastal margin (within AONB) – corridor including landfall crosses this area (**Figure 26.1**). Above hight tide level – cables installed by HDD or comparable trenchless technique. Open cut trenching within the inter-tidal area.;
- Fox Hill/Muckleburgh Hill Open Access Land (within AONB) – corridor lies outside (**Figure 26.1**);
- Kelling Heath Open Access Land (within AONB) – corridor lies outside (**Figure 26.1**);
- Weybourne Wood including National Trust (always open) and Open Access Land (within AONB) – corridor crosses this area (**Figure 26.1**). Crossed by HDD and therefore woodland retained, with the exception localised removal of vegetation at the HDD launch and reception pit (approximately 50m x 100m area within the woodland), and access routes;

- Upper Sheringham Common (within AONB) – corridor lies outside (**Figure 26.1**); and
- Upgate Common (outside AONB) - corridor lies outside (**Figure 26.3**).

322. Users of accessible and recreational landscapes within the Norfolk Coast AONB are judged to be of high sensitivity (high susceptibility and national value). Users of accessible and recreational landscapes outside the Norfolk Coast AONB are judged to be of medium sensitivity (high susceptibility and community value).

323. Users of Weybourne beach and the coastal margin would experience effects similar to those described for the Coast Path in **Section 26.6.2.2.4**, which follows a route above the beach and through the coastal margin as it passes through the onshore cable corridor study area. The HDD and other works should not require any prolonged periods of restrictions or closures to the beach for public access, although it is possible that some work activities may require short periods of restricted access. For example, open cut trenching below the high tide level, use of a temporary seawater pipe and pump to supply seawater to the onshore HDD temporary works compound for use with the drilling fluid, as well as the use of vehicles to transport the ducting across the beach.

324. The Fox Hill/Muckleburgh Hill and Kelling Heath Open Access Land occupy elevated areas comprising a mix of woodland cover and more open areas of heathland crossed by numerous paths. Users of these areas are likely to experience intermittent, elevated views of construction activities. Some offshore activity associated with the landfall and works in the intertidal zone would be visible from some areas on Fox Hill/Muckleburgh Hill.

325. Weybourne Wood would be crossed by the cable corridor, as described in **Section 26.3.2.1.1**. The National Trust provides on-line information on access to Sheringham Park including a path between Weybourne Station and walks within Sheringham Park which would cross the onshore cable corridor and pass a potential HDD launch and receipt pit south of the railway line (see National Trust information leaflet in **Appendix 26.1 LVIA Annexes**). The section of Weybourne Wood defined as National Trust Land – Always Open (see **Figure 26.1**) would be crossed using HDD or a similar trenchless technique, as described in **Section 45**, retaining all but a small area of vegetation at the HDD launch/receipt pit within the woodland. There is potential for temporary works at HDD launch/receipt pit locations and vehicle movements to be visible from the edge of the adjoining National Trust Land/open access land; and/or from the footpath between the railway station and Sheringham Park, but construction works are unlikely to be visible from the majority of this accessible recreational landscape.

326. Upper Sheringham Common is a caravan park (Woodlands Caravan Park) and there are likely to be close views of construction works to the west from within the common land.

327. Upgate Common is enclosed by vegetation and buildings, and there are unlikely to be views of construction works from the majority of the Common. Views could potentially be possible from the western tip at a distance of approximately 0.45km or more; however, there are layers of vegetation including trees, scrub and hedgerows between the common and the cable corridor and effects are unlikely.

328. Where construction activities are visible from within these areas, the construction lighting could also be visible, although other light sources associated with settlements, roads and, from coastal locations, shipping would also be seen. Construction lighting is likely to have the most notable impact at Weybourne beach, Fox Hill/Muckleburgh Hill, Weybourne Wood and Upper Sheringham Common due to the close proximity of the receptor to the onshore cable corridor, however, all of these accessible landscapes are likely to be infrequently visited during the hours of darkness. Impacts associated with construction lighting would typically occur during periods where core working hours extend beyond the hours of daylight (e.g. autumn/winter), which at most would be for a few hours each day. Where HDD crossings are proposed, 24-hour working might be required from its commencement until the completion of each duct installation to ensure that the risk of the boreholes collapsing is minimised. This, in a RWCS, would be a maximum of seven weeks for each Projects or twelve weeks if the Projects are constructed concurrently.

26.6.2.2.5.1 Assessment

329. Impacts on visual receptors at the accessible recreational landscapes within the AONB are predicted to be of limited spatial extent, up to large scale during peak of construction, temporary and short-term duration and reversible. Gaps in hedges or removal of vegetation would be visible from some locations; any visual effects due to this would be minor and reduced over time as planting and restored vegetation matures (medium-term). Overall, for users of these areas that lie within the AONB, the sensitivity of the receptor is high, and the magnitude of the effect would be medium-low. The impact would be of **moderate significance** and **adverse**.

330. The effect on visual receptors at Upgate Common (which lies outside the AONB and would not be crossed by the onshore cable corridor) would be of negligible magnitude, **minimal significance** and **neutral**.

26.6.2.2.6 Local Roads and Public Rights of Way

331. Users of PRoWs within the Norfolk Coast AONB are judged to be of high sensitivity (high susceptibility and national value). Users of PRoW outside the Norfolk Coast AONB are judged to be of medium sensitivity (high susceptibility and community value).

332. Users of local roads within the Norfolk Coast AONB are judged to be of high-medium sensitivity (medium susceptibility and national value). Users of local roads outside the Norfolk Coast AONB are judged to be of medium sensitivity (medium susceptibility and community value).

333. Impacts on users of local roads and PRoWs would occur as a result of construction activities being seen by users of these routes. The greatest impacts would be experienced where the onshore cable corridor intersects routes using open trench techniques, and PRoW may be temporarily diverted for short distances. Where routes are not crossed or physically affected by the onshore cable corridor views would generally be intermittent due to the extent of roadside and field boundary vegetation that filters or screens views. The greatest magnitude effects would typically be experienced within a few tens of meters of the construction activities where they are most visible and where routes run parallel to the onshore cable

corridor and thus experience close views over a greater extent. Beyond approximately 100m from the onshore cable corridor, the layering effect of vegetation in the surrounding landscape would frequently result in views becoming very limited; where construction activities are seen, they would be in the distance and are unlikely to be especially notable.

334. Views of construction lighting are likely to have limited impact on road users but may be more notable from unlit PRoWs, although these are likely to see less use during hours of darkness than during the daytime. In all cases impacts would typically occur during periods where working hours extend beyond the hours of daylight (e.g. autumn/winter) and only for a few hours each day. Where HDD crossings are proposed, 24-hour working might be required from its commencement until the completion of each duct installation to ensure that the risk of the boreholes collapsing is minimised. This, in a RWCS, would be a maximum of seven weeks for each Projects; or twelve weeks if the Projects are constructed concurrently.

335. The overall impacts on visual receptors using local roads and PRoWs are predicted to be of limited spatial extent, ranging from large scale to negligible, temporary short-term duration and reversible. Gaps in hedges would be visible from some locations; any visual effects due to this would be minor and reduce over time as planting matures (medium-term). Where trees and woodlands are removed and not re-planted (permanent) within sight of local roads and PRoWs these changes would generally affect short parts of longer journeys. The magnitude would range from medium-low, where the construction works would be seen up close including permanent tree removal, through to negligible or no change where views of the construction works would be very limited or non-existent.

336. Overall, for users of PRoWs within the AONB, the sensitivity of the receptor is high, and the magnitude of the effect would be medium-low. The impact would be of **moderate significance** and **adverse**.

337. Overall, for users of PRoWs outside the AONB, the sensitivity of the receptor is medium, and the magnitude of the effect would be medium-low. The impact would be of **moderate-slight significance** and **adverse**.

338. Overall, for users of local roads within the AONB, the sensitivity of the receptor is high-medium, and the magnitude of the effect would be medium-low. The impact would be of **moderate significance** and **adverse**.

339. Overall, for users of local roads outside the AONB, the sensitivity of the receptor is medium, and the magnitude of the effect would be medium-low. The impact would be of **moderate-slight significance** and **adverse**.

26.6.2.3 Effects on Designated and Defined Landscapes and Landscapes Referred to by Policy

26.6.2.3.1 Norfolk Coast AONB

340. The Norfolk Coast AONB is divided into three discrete geographical areas (see **Figure 25.1** of **Chapter 25 SVIA**). The western and eastern sections are outside the study area. The onshore cable corridor runs through the largest central section of the AONB for approximately 4.8km as shown on **Figure 25.1** and includes the location of the landfall site at Weybourne. The central section of the AONB extends

for approximately 65km along north Norfolk coast between Hunstanton (west) and Paston (east). The Norfolk Coast AONB is judged to be of high sensitivity to SEP and/or DEP.

341. Within the Norfolk Coast AONB, the route of the onshore cable corridor has been designed to avoid crossing woodlands and areas or groups of trees, where possible. Where this is not possible, all significant woodlands, including Weybourne Wood within the Norfolk Coast AONB, and many smaller woodlands and areas of trees and scrub would be retained where they lie within the cable corridor, by utilising trenchless crossing techniques. The only exception would be the localised removal of vegetation at the HDD launch and reception pit (approximately 50m x 100m area within the woodland), and along the existing access routes within Weybourne Wood where vegetation might need to be cut back to permit access.

342. In addition, where the cable corridor crosses main roads, railways and/or watercourses, it would be installed via trenchless crossing techniques (such as HDD) and therefore avoid the loss of hedgerow and vegetation associated with the feature.

343. As a result, a significant proportion of the Norfolk Coast AONB, within the vicinity of the onshore cable corridor, will be crossed via trenchless techniques, which will minimise (in so far as possible) potential effects on the designated landscape.

344. The assessment of effects on the Norfolk Coast AONB focuses on the documented 'special qualities' of the designated area in relation to landscape/seascape character and views. Consideration is also given to information contained in the Norfolk Coast AONB Integrated Landscape Guidance (Norfolk Coast Partnership, 2009).

345. Seven key qualities of natural beauty of the Norfolk Coast AONB are described in the 'Norfolk Coast Area of Outstanding Natural Beauty Management Plan 2014-19' (Norfolk Coast Partnership, 2014). Three are of relevance to this assessment and are discussed below.

346. *"2. Strong and distinctive links between land and sea*

347. *The area's distinctive and unique character is based on the visual, ecological, socio-economic and functional links between land and sea."*

348. The proposed views between land (within the AONB) and sea (outside the AONB) and along the coast, would be affected for a temporary short-term duration while landfall works and the northern section of the onshore cable corridor are being implemented. There are no hedgerows or trees close to the coast that are likely to be removed so all effects would be short-term and temporary.

349. Given the limited spatial extent of this part of the onshore cable corridor in relation to the AONB and the nature of potential effects (i.e. short-term construction activity followed by landscape reinstatement), construction of the onshore cable corridor would not compromise this special quality of the AONB.

350. *"3. Diversity and integrity of landscape, seascape and settlement character*

351. *Key quality is based on maintaining diversity of character types rather than uniformity across the area, including landscapes and seascapes, settlement pattern, building materials and styles."*

352. As discussed in **Section 26.6.2.1** the construction works would lead to short term effects on landscape character to a limited spatial extent of each LCA that the

onshore cable corridor passes through. Effects would be longer term where hedges are removed and re-planted and permanent where trees and woodland are removed and not re-planted over the cable easement (approximately 20m wide if both Projects are constructed and 12m if only one Project is constructed). Where woodland is removed permanently an alternative appropriate land-use would be proposed subject to agreement with the landowners, such as habitat creation or agriculture, appropriate to local landscape character. A small area of commercial (coniferous) forestry would be removed within Weybourne Wood as described in **Section 26.6.2.1.2**. Relatively small-scale permanent removal of coniferous trees (see **Appendix 20.15 Arboricultural Survey**), and replacement with an appropriate alternative land use, would have limited effects on landscape character in the context of the extensive existing woodland and trees within the landscape.

353. The diversity of character types, settlement patterns and building materials and styles would not be affected, and the onshore cable works would not compromise this quality of natural beauty.

354. *"6. Sense of remoteness, tranquillity and wildness*

355. *A low level of development and population density for lowland coastal England, leading to dark night skies and a general sense of remoteness and tranquillity away from busier roads and settlements and, particularly for undeveloped parts of the coast, of wildness."*

356. Construction activity along the onshore cable corridor and at the landfall site would lead to a temporary reduction in relative tranquillity over a very localised area within the AONB. This would move progressively along the onshore cable corridor such that any area would only be affected for a short period of time. The presence of cable installation vessels offshore may also temporarily impact on the sense of wildness of this section of the coast near the landfall.

357. Construction activities would lead to short term effects on users of recreational routes/areas that either cross or are nearby to the onshore cable corridor and the landfall. As set out in **Section 26.6.2.2.4**, the overall impacts on people using these routes/areas within the onshore cable corridor's study area would be affected temporarily and to a limited spatial extent. Gaps in hedges would be visible from some locations resulting in very minor visual effects and reduce over time as planting matures (medium-term). Where trees are removed and not re-planted (permanent) within sight of key these routes these changes would affect short parts of longer journeys. It is unlikely that removal of trees or hedges would be visible from the Coast Path.

358. Given the limited spatial extent of this part of the onshore cable corridor in relation to the AONB and the nature of potential effect (i.e. short-term construction activity followed by landscape reinstatement), construction of the onshore cable corridor would not compromise this special quality of the AONB.

359. Construction lighting may result in temporary effects on the dark sky quality of a very localised area within the AONB. However, lighting would generally only be used in times of low light, be task orientated, and be directional to minimise light spill. There may be short periods where 24-hour working is required to complete tasks that need to be undertaken in a continuous operation at a particular location. The longest trenchless crossing within the AONB would be under Weybourne Wood, which may

require continuous working of approximately 10 weeks of 24 hour working over a 12 -week period.

360. Any activities outside of the standard working hours would be agreed with the relevant local authority Environmental Health Officer in consultation with relevant stakeholders as required.

361. Kelling Heath Holiday Park Dark Sky Discovery Site lies approximately 1km from the onshore cable corridor as shown on **Figure 26.1**. The site comprises an area of mown grass enclosed by scrub and woodland vegetation within the complex of Kelling Heath Holiday Park. The onshore cable corridor construction works would not be visible from Kelling Heath Holiday Park Dark Sky Discovery Site due to the intervening vegetation. Construction lighting is unlikely to affect the dark sky quality of Kelling Heath Holiday Park Dark Sky Discovery Site.

362. SEP and/or DEP may lead to a temporary short-term change in this special quality within a small part of the AONB, although following completion of construction this would not be affected.

26.6.2.3.1.1 Assessment

363. Given the limited potential for the onshore cable corridor (including landfall) to compromise these special qualities of the AONB, effects would not be significant. Effects on the Norfolk Coast AONB are judged to be (balancing effects on landscape character and visual amenity) up to medium-small scale. This would affect a very limited extent of the AONB and be of low-negligible magnitude, **slight** significance. Effects would be adverse.

26.6.2.3.2 North Norfolk Heritage Coast

364. As can be seen on **Figure 26.1** the eastern edge of the NNHC lies within approximately 0.6km of the onshore cable corridor at the landfall on the coast. The NNHC extends along the coast and offshore for a length of over 50km from Holme next the Sea in the west to west of Weybourne in the east. The full extent of the NNHC can be seen on **Figure 25.1** of **Chapter 25 SVIA**.

365. Whilst the objectives of the NNHC are broad in their description, and do not specifically refer to landscape character or views per se, elements of the following objectives relate to landscape and visual amenity:

- *"to conserve protect and enhance the natural beauty of the coasts, including their terrestrial, littoral and marine flora and fauna, and their heritage features of architectural, historical and archaeological interest;*
- *to facilitate and enhance their enjoyment, understanding and appreciation by the public by improving and extending opportunities for recreational, educational, sporting and tourist activities that draw on, and are consistent with the conservation of their natural beauty and the protection of their heritage features."* (Norfolk Coast Partnership Website, Dark Sky Discovery Sites webpage (accessed November 2021))

366. The NNHC is judged to be of high sensitivity to SEP and/or DEP.

367. Construction works at the landfall are likely to be visible from the eastern tip of the NNHC, at a distance of approximately 0.6km or more, for a short-term duration. This would have limited potential to affect the natural beauty or visual amenity of the NNHC. Effects would be negligible magnitude, **minimal significance** and **neutral**.

26.6.2.3.3 South Norfolk River Valleys

368. As noted in **Section 26.5.7.1** the onshore cable corridor crosses South Norfolk District LCA A2 Yare/Tiffey Rural River Valley and passes within approximately 80m of LCA A3 Tud Rural River Valley (**Figures 26.11** and **26.12**) which are referred to in Policy DM 4.5 (**Figures 26.4** and **26.5**).

369. This policy states that particular regard will be had to protecting the distinctive characteristics, special qualities and geographical extents of the identified Rural River Valleys and Valley Urban Fringe landscape character types (South Norfolk Development Management Development Document (2015)).

370. The supporting text to Policy DM 4.5 states:

371. *"4.49 Studies confirm the distinctive characteristics and special qualities of the five identified Rural River Valleys and the Valley Urban Fringe and their constituent Landscape Character Areas, within South Norfolk that are desirable to safeguard. They contribute:*

- *a distinctive character and sense of place;*
- *contain important/rare features and landmarks and diverse habitats;*
- *grazed pastoral valley floors; intimate and enclosed landscape with overall small-scale character; and*
- *enjoy a largely intact rural character, which in places is highly tranquil and undisturbed.*

372. *"4.50 The Rural River Valleys and Valley Urban Fringe Extents are identified with the Landscape Character Areas to which they contribute"*.

373. Three sections of HDD are proposed within LCA A2 Yare/Tiffey Rural River Valley, retaining significant vegetation. These are (from north to south):

- The River Yare and woodland and trees adjacent to the river;
- Chapel Street including mature trees and hedgerows lining both sides of the road; and
- The River Tiffey and woodland and trees adjacent to the river.

374. The cable corridor would cross a woodland west of LCA A3 Tud Rural River Valley. This would also be retained by employing HDD.

375. Effects on these River Valley landscapes referred to by Policy DM 4.5 would be the same assessed on the LCAs in **Section 26.6.2.1**. Effects on these River Valley landscapes would be up to low-negligible magnitude and **moderate-slight significance** at the locations where some areas of trees are removed and not re-planted (within LCA A2), reducing to **minimal significance** outside these areas. Where effects occur, they would be **adverse**. The impact would be negligible magnitude and **minimal significance** for the majority of the landscape of the

landscapes. Overall impacts on these River Valley landscapes would be negligible magnitude, **minimal significance** and **neutral**.

26.6.3 Potential Impacts During Construction – Onshore Substation

376. As set out in **Section 26.6.1.2**, the principal effects arising from the onshore substation is likely to occur during the 40-year operational lifetime of SEP and/or DEP, or 38-year operational lifetime if both projects are constructed sequentially with the largest potential gap between the commissioning of each project and are reversible. The construction of the onshore substation would include temporary activities involving plant movement, crane operations, and the construction or dismantling of the substation and its associated equipment.

377. Given the temporary duration of the construction phases compared to the longer-term duration of the operational phases of SEP and/or DEP, potential effects during construction would not be greater than those experienced during the operation of the onshore substation and are likely to be less due to the shorter-term duration. These potential effects would be different in nature to those experienced while the onshore substation is in operation, albeit similar or lower (due to shorter duration) in terms of its magnitude and significance.

378. The greatest effects on landscape receptors during construction would be no greater than those experience during operation. At most, effects of a **moderate significance** and **adverse**, affecting the landscape character within the immediate context of the onshore substation. Effects on the overall landscape character would be of **minimal significance** and **neutral**.

379. The greatest effects on visual receptors during construction would be no greater than those experienced during operation. At most, effects would be of a **major** significance and adverse, affecting visual receptors using publicly accessible locations within the immediate context of the onshore substation.

380. A summary of the effects that would arise during construction is presented in **Appendix 26.1 LVIA Annexes**.

26.6.4 Potential Impacts During Operation – Onshore Cable Corridor

381. As set out in **Table 26-1**, the Scoping Opinion from PINS (The Planning Inspectorate 2019) states that *"… the Inspectorate considers visual effects from the onshore cable route (including the landfall) during operation are unlikely to be significant and can be scoped out of the assessment."*

382. The greatest effects that would arise as a consequence of the onshore cable corridor have been assessed for the construction phase (see **Section 26.6.2**). Effects during operation are unlikely to be significant given the cables would be buried and land re-instated following completion of construction, with link boxes buried with a frequency of one every 1km along the onshore cable corridor, with a secured access panel visible on the ground surface and an above ground maker post to locate it.

26.6.5 Potential Impacts During Operation – Onshore Substation

26.6.5.1 Effects on Landscape Character

383. **Section 26.5.4** has identified those LCAs for further detailed assessment.

384. As set out in **Section 26.5.3**, principal effects would occur directly within the extents of the onshore substation, with indirect effects contained to the ZVI illustrated on **Figure 26.15**.

385. Within the ZVI, effects due to the onshore substation would range from large scale within the two fields that surround the site, and the one field it lies within, and medium scale reducing to small scale within the other fields within the ZVI.

386. As described in **Section 26.5.3**, there would be little to no visibility of the onshore substation beyond the ZVI as a result of a combination of intervening vegetation, landform and/or buildings. Fieldwork has identified that effects would be of a negligible scale beyond the extent of the ZVI. Should views to the onshore substation be possible beyond the ZVI, the intrinsic and prevailing characteristics of the LCAs in the wider landscape would not be discernibly affected through the introduction of the onshore substation, being in an area already influenced by infrastructure including the Norwich Main substation, pylons and overhead wires, railway lines, the A140 and A47.

387. Local LCAs, as described in the South Norfolk Landscape Assessment (Land Use Consultants, 2001) are shown on **Figure 26.13**. Descriptions for the assessed LCAs that are relevant to this LVIA are summarised below, along with further observations based on fieldwork.

26.6.5.1.1 B1 Tas Tributary Farmland

388. **Figure 26.13** shows the location of B1 Tas Tributary Farmland in relation to the onshore substation. There are two units of this LCA within the onshore substation's study area with only that hosting the site, the larger of the two units, likely to experience any impacts on landscape character.

389. The SNLA (LUC, 2001) describes the location and boundaries of overarching LCT, B Tributary Farmland as follows:

390. *"The tributary farmland occupies a large extent of the South Norfolk landscape occurring across the whole district. It is a broad transitional landscape type defined by the plateau uplands and river valleys, lying between 20m and 50m AOD."*

391. The SNLA also sets out a list of key characteristics for the LCT as follows:

- *"**Shelving and gently undulating landform** created by small tributary valleys, with tributary rivers cutting through the glacial till to create a landscape of restrained variety.*
- ***Transitional landscape** occupying the mid ground between the upland plateaux and the main river valley landscapes providing opportunities for long and framed views.*
- ***Tamed and peaceful farmland** with scattered small farm woodlands creating a quiet rural landscape.*

- ***Dispersed but evenly distributed settlement pattern*** *of small, nucleated villages and small farmsteads, occasionally with large agricultural sheds.*
- ***An intricate network of narrow winding rural lanes*** *often bounded by banks or ditches with a sense of impenetrability.*
- ***Tributaries elusive*** *– evident but usually hidden within the landscape by topography or trees*
- ***Medium to large-scale arable farmland*** *of cereals and sugarbeet and occasional fields of sunflowers or other crops with sparse and/or overgrown hedgerows and hedgerow trees.*
- ***Remnant parkland****, which sometimes relates to former deer parks, plus areas of common land.*
- ***Mixed architectural character*** *comprising modern bungalow development and traditional vernacular architecture with gable ends (predominantly stepped) and other vernacular influences such as brick and flint and isolated churches.*
- ***High proportion of important ecological assemblages*** *protected as SSSIs including woodland, and wetland habitats."*

392. The landscape character description states that *"The open arable landscape is broken by deciduous woodland blocks, particularly following the tributary corridors, which impart a semi-wooded, semi-enclosed character to much of the area."* This semi-wooded, semi-enclosed character is typical of the landscape of and within the immediate vicinity of the onshore substation, as can be seen by the aerial photograph shown on **Figure 26.16**.

393. The onshore substation site is located within the LCA B1 Tas Tributary Farmland of this LCT. LCA B1 is described by the SNLA as follows:

394. *"The Tas Tributary Farmland is a large area of land situated between the Tas Rural River Valley and the surrounding Plateau areas at an elevation of between about 30m AOD and up to 50m AOD..."*

395. The SNLA sets out a list of LCA's key characteristics. Those of relevance are as follows:

- *"**Open, gently undulating to flat and sloping landscape incised by shallow tributary valleys**, the tributary streams of which are not prominent landscape features.*
- ***Large open arable fields*** *of cereal, sugarbeet and occasionally sweetcorn.*
- ***Framed open views*** *across the countryside and into adjacent character areas.*
- ***Small blocks of deciduous woodland*** *of high ecological and visual quality. These create wooded horizons which add variety to and create intimacy within the landscape. …*
- ***Scattered remnant hedgerow trees****, particularly oak, sometimes including intact avenues lining the roads or marking former, denuded, field boundaries.*
- ***Transportation corridors*** *including main connecting roads.*

- ***Network of recreational footpaths***.
- ***Ditches, low banks and wide grass verges*** *associated with the network of rural roads.*
- ***Settlement characterised by a small number of large villages*** *including the administrative centre of South Norfolk – Long Stratton – with smaller hamlets, scattered farmhouses and agricultural buildings."*

396. The SNLA states *"The large-scale arable landscape has an open to semi-enclosed character and there are very few hedgerows remaining. …"* (Paragraph 8.3.) The landscape within close proximity to the onshore substation site is enclosed by trees, woodlands and hedgerows, and has a more enclosed character than is typical of the wider LCA.

397. The A140 and main railway line, which lie within the ZTV of the onshore substation, are described as follows. *"This character area has been affected by the presence of transportation corridors. These include the Norwich Road (A140) and the London-Norwich Railway. …"* (Paragraph 8.8.)

398. Paragraph 8.9 states "*There are views to Norwich and the Norwich Southern Bypass from the northern area of the Tas Tributary Farmland and also into the Tas Rural River Valley Character Area, including towards the earthworks of Venta Icenorum (Caistor St Edmund) and Dunston Hall. The eastern part of the area has been affected by the impacts of modern infrastructure, especially by the large double line of pylons and electricity substation, west of Dunston Hall."*

399. The onshore substation site is located within the northern and eastern part of the LCA, but views to Norwich, the Norwich Southern Bypass, into the Tas Rural River Valley LCA, and to Venta Icenorum and Dunston Hall are obscured by trees and woodland immediately north of the site and east of the A140. The onshore substation site lies within the area affected by the impacts of modern infrastructure; the ZVI is crossed by a line of large pylons, the main railway line and the A140, and the Norwich Main substation lies immediately north of the fields which the onshore substation lies within.

400. The SNLA considers each of the key assets that form the overall LCA and notes its 'level of importance' on a four category scale. The table from the SNLA is copied below with commentary on how the proposed onshore substation could affect each asset. The first three columns are copied from the SNLA. The fourth column identifies the potential for the onshore substation to affect each asset.

401. The SNLA categorises the level of importance as follows:

- ✔ ✔ ✔ very characteristic/important;
- ✔ ✔ characteristic/important;
- ✔ noticeably present/important; and
- – asset not present or present but by virtue of extent or quality does not contribute significantly to landscape character.

Table 26-13: Landscape Assets of LCA B1 Presented in the SNLA

Asset/Level of Importance		Notes	Potential for the onshore substation to affect this asset
National/International:			
Nationally important ecological assemblages	✔ ✔	Hornbeam coppice habitats and ancient woodlands of particular importance plus some grasslands	None
Presence of Scheduled Ancient Monuments	-	None	None
Presence of round-towered churches	✔		None
Presence of isolated churches	✔		None
District/county			
Strong regional vernacular character	✔ ✔		The substation would not be of vernacular character, being a functional substation. It would reflect the character of the existing Norwich Main substation and pylons and overhead wires.
Presence of historic parkland particularly EH listed	-		None
Wooded appearance	✔		The site lies within a wooded area of landscape. Planting proposals, including new woodland, have been development for the DCO application, with details set out in the **OLMP** (document reference 9.18).
Distinctive valley landform	✔		None. The site does not lie within valleys.
Waterways visible within the landscape	✔		None
Watermills present	-		None
Windmills present	-		None
Moats present	✔		None
Local			
Pastoral Farmland with visible grazing animals	✔		None
Important Views that provide sense of place	✔ ✔	Particularly in north of area	None. The site is within an area largely enclosed by trees and woodland and visually separated by a woodland belt from the

Asset/Level of Importance		Notes	Potential for the onshore substation to affect this asset
			views referred to in the north of the area.
Willow pollard and/or poplar-lined watercourses	✔		None
Drainage ditches	✔ ✔		Drainage ditches are not a prominent feature within the landscape of the onshore substation site or its surrounding context. The onshore substation site would not affect any existing drainage ditches within the surrounding landscape. Water that fall on the site would be collected and discharged to either a soakaway or to a sewer connections.
Wide grass verges alongside roads	✔ ✔		None
Good hedgerow network	-		The substation and 400kv connection would lead to the loss of one section of hedgerow (20m length), and other existing hedgerows enclosing the field that the substation lies within would be strengthened with new hedgerow planting in gaps. However, the hedgerow network is not a noted landscape asset of this LCA.
Mature hedgerow trees	✔	Some particularly noteworthy remnant hedgerow avenues	The substation and 400kv connection will result in the removal of a row of mature trees and shrubs up to 20m.
Presence of river crossings	✔		None
Sunken Lanes	✔		None
Water bodies	✔ ✔		None
Distinctive plateau landscape	-		None
Area of or including significant strategic breaks between settled areas	✔ ✔	Generally important – particularly the area north of the Poringland Settled Plateau farmland and south of Norwich	None. There are a number of settlements within the wider landscape but there would be little or no visibility of the substation from them, and the substation would not affect strategic beaks between settled areas.

402. It can be seen from **Table 26-13** that the onshore substation has very little potential to adversely affect landscape assets of importance. No assets are of the highest level of importance within this LCA. In relation to key assets identified as 'characteristic/important', the onshore substation would not be of strong regional vernacular character, being a functional substation, but would be similar in character to the existing electricity infrastructure in the area. It would have no potential to affect the other key assets identified as 'characteristic/important'.

403. The SNLA notes that the principal sensitivities and vulnerabilities of the LCA include loss of vegetation structure that would lead to a greater sense of openness; intrusion by tall and large elements including farm buildings and pylons; and the potential adverse effect upon views to/from Norwich and the Bypass.

404. The area in which the onshore substation is located, in the northern part of the LCA, is already heavily influenced by the existing man-made infrastructure that includes the Norwich Main substation, electricity transmission infrastructure, the main railway line, and the A140 and A47. The site of the consented Hornsea Three onshore substation lies partially within the northern edge of this LCA, and the consented buried cable connection between Hornsea Three and Norwich Main Substation lies entirely within this LCA. The SEP and DEP onshore substation would not affect views to/from Norwich or the Bypass (A47). Whilst visibility of the onshore substation would be possible from its immediate locality, beyond this extent, there would be little to no visibility of the substation. The substation would be visually enclosed by trees, woodland and hedgerows. Therefore, the susceptibility of B1 to SEP and/or DEP is medium.

405. In light of information presented in the SNLA, which outlines the landscape assets and their level of importance it is judged that whilst valued by the local population, there is no wider recognition of the LCA's value. B1 is of community value.

406. Taking both susceptibility and value into account, it is assessed that B1 would be of a medium – low sensitivity to the onshore substation.

407. Effects on landscape character would only occur within the area covered by the ZVI as described in detail in **Section 26.5.3** and illustrated on **Figure 26.15**.

408. The greatest effects on B1 would arise within the site of the onshore substation and its immediate context, where there would be a direct change to the present land-use from agricultural farmland to an electrical substation, and visibility of the new development would be possible from locations in close proximity.

409. Upon completion, before proposed planting has established, effects would range from large scale within the site itself; to medium and small scale within the ZVI. Effects would affect a very limited extent of the overall LCA and be of medium magnitude and **moderate significance**.

410. Over time, as proposed planting around the substation establishes, visibility of the onshore substation would reduce to a degree, as shown in the visualisations supporting this LVIA (**Figures 26.17 – 26.25**). Proposed tree and scrub planting is likely to obscure the majority of the buildings and equipment within the site, but electrical equipment is likely to be visible above the new vegetation. Similarly, a greater degree of visibility would be experienced during the winter months when the vegetation in out-of-leaf. Proposed planting would grow to partially screen the onshore substation and help it become more integrated in the landscape although

it would not notably reduce the scale of landscape impacts over time. Long term effects would be the same as those assessed upon completion.

411. Effects arising either upon completion or in the long term (once proposed planting has established), would be on balance, adverse, albeit landscape proposals set out in the **OLMP** (document reference 9.18) seek to deliver more than just visual screening alone. Landscape proposals would create new areas of habitat and ecological enhancements, strengthen green infrastructure, and enhance some of the landscape characteristics of the surrounding landscape, which would enhance landscape character.

412. Beyond the immediate context of the onshore substation and outside the ZVI, it is unlikely that effects on the landscape character would arise, either upon completion or once proposed planting has established in the long term. Overall, effects on B1 would be of a negligible scale and magnitude, **minimal significance** and **neutral**.

26.6.5.2 Effects on Visual Receptors

26.6.5.2.1 Visual Aids

413. Wireline visualisations have been used to aid the assessment. The wireline visualisations were generated to show the maximum parameters within which the substation would be built, representing the highest potential platform level, the maximum footprint, and buildings at 15m high and electrical equipment at 30m high above platform level. The photomontages illustrate an indicative 3D model of the proposed substation and landscape works, and the actual design would be finalised post DCO consent. The photomontages present an illustrative arrangement of the likely spread of the onshore substation's components, which are judged to represent the RWCS within the full footprint of the onshore substation site. Associated infrastructure, such as the access road, have been illustrated accordingly to generate a realistic impression of how the likely components of the onshore substation would be seen together within the landscape. At this stage of the development process, the full extent of the substation platform is shown for illustrative purposes and would be refined in accordance with the final design following DCO consent.

414. The photographs of the existing views, wirelines and photomontages are shown on **Figures 26.17** to **26.25**. A detailed description of the methods by which wirelines are prepared is included in **Appendix 26.1 LVIA Annexes**.

415. Viewpoint descriptions are set out in **Appendix 26.1 LVIA Annexes** with the scale of effects summarised below. The location of each viewpoint is shown on **Figures 26.17** to **26.25.**

416. The scale of effect at each viewpoint is summarised below:

Table 26-14: Effects at Representative Viewpoints

Viewpoint Reference	Distance & Direction	Scale of Effect	
		Medium-term	Permanent
Viewpoint 1 – Bridleway (Swardeston BR9)	West, 600m	Small	Small
Viewpoint 2 –	East, 150m	Large	Large

Viewpoint Reference	Distance & Direction	Scale of Effect	
		Medium-term	Permanent
Permissive Bridleway, west of A140			
Viewpoint 3 – Bridleway (Stoke Holy Cross BR3)	North, 200m	Large	Large
Viewpoint 4 – Footpath (Swardeston FP6)	South-west, 1.5km	Negligible	Negligible
Viewpoint 5 – Footpath (Mulbarton FP8)	South-west, 2.1km	Negligible	Negligible
Viewpoint 6 – Norwich Road, Stoke Holy Cross	South-east, 1.8km	Negligible	Negligible
Viewpoint 7 – Venta Icenorum	North-east, 2km	Negligible	Negligible
Viewpoint 8 – Bridleway (Keswick BR3)	North-west, 3.7km	Negligible	Negligible
Viewpoint 9 – Marston Marshes	North, 3.6km	Negligible	Negligible

417. Each of the viewpoints is a 'sample' of the potential effects, representing a wide range of visual receptors – including not only those actually at the viewpoint, but also those nearby, at a similar distance and/or direction. The potential impact of lighting associated with the onshore substation on night-time views are accounted for in the following assessment in accordance with the assumptions described in **Section 26.4.6.2**.

418. As set out in **Section 26.5.3**, the anticipated main area of visibility within each of the study area would be contained to the ZVI within the immediate context of the onshore substation. In light of this area of potential visibility, and from the judgements reached on the scale of visual effect from each representative viewpoint, effects would be greatest within the immediate context of the onshore substation, along the PRoWs, the main railway line and the A140 which surround the site. The greatest visual effects of the onshore substation would vary dependent on the location of the visual receptors; however overall, it can be seen that large to small scale effects would occur from the PRoWs represented by Viewpoints 1 to 3 (**Figures 26.17** to **26.19**) which all lie within approximately 600m of the onshore substation site and within the ZVI.

419. Beyond the extent of the ZVI, views to the onshore substation would be more obscured by vegetation, buildings and landform, with little to no visibility the substation as illustrated in Viewpoints 4 to 9 (**Figures 26.20** to **26.25**). Effects from viewpoints outside the ZVI would be of a negligible scale.

420. It is important to note that, whilst the proposed planting would grow to partially screen the buildings and lower parts of the equipment within the site, and help it become more integrated in the landscape, it would not notably reduce the scale of landscape effect over time. Taller parts of the onshore substation would remain visible above and beyond the intervening vegetation, especially during the winter months when the vegetation in out-of-leaf as illustrated on the photomontages in **Figures 26.17 – 26.25**.

26.6.5.2.2 Roads and Rail (A140 and Norwich-Ipswich Railway Line)

421. As noted in **Section 26.5.5.1.2**, effects are only likely to occur to users of this road and railway where they are within the ZVI (for road and rail lengths of less than approximately 0.7km for the A140 and 0.6km for the Norwich-Ipswich railway line). Both routes are well used, and a degree of visibility would be possible to the onshore substation. Beyond these short sections views of the substation are likely to be obscured by intervening vegetation, development and/or landform.

26.6.5.2.2.1 A140

422. The A140 traverses the study area of the onshore substation. The onshore substation site lies approximately 150m to the west of the road. There is no footway along the A140 within the ZVI.

423. Users of the A140 are judged to be of a low sensitivity (low susceptibility and limited value).

424. Viewpoint 2 is taken from a PRoW immediately west of the A140 (**Figure 26.15**). There is intermittent tree and shrub vegetation along the west side of the A140 (east of Viewpoint 2) within the ZTV and the views towards the site would only be as open as represented by Viewpoint 2 where gaps occur, and intermittently for brief periods while travelling along the road. In winter, when deciduous trees are not in leaf, views would be more continuous than in summer. Views of the onshore substation would be sideways to the direction of travel.

425. As can been seen from **Figure 26.18**, the onshore substation would be seen above and between intervening vegetation along the A140 and the railway line upon completion before proposed planting has established.

426. The onshore substation would be visible beyond the existing vegetation and railway line's electrical cables and would be seen in the foreground to the pylons and overhead wires. The maximum height parameters shown in **Figure 26.18** illustrate that parts of the onshore substation have the potential to appear taller than the existing pylons in the views and could screen two existing pylons and associated wires.

427. The route of the operational access road to the onshore substation would pass through Norwich Main Substation to the north of the substation site, crossing the PRoW Stoke Holy Cross BR3 adjacent to the railway line. Moving construction and site vehicles could be visible beyond the existing vegetation and railway line in some views. This would be in the context of existing road infrastructure and moving vehicles presently experienced by receptors using the A140.

428. Upon completion, before proposed planting has established, effects would be, at most, large scale (as assessed at Viewpoint 2). This would affect a very limited extent of the overall route, and result in visual effects of a medium magnitude and **slight** significance.

429. Over time, as proposed planting between the substation and the railway line establishes, visibility of the onshore substation would reduce to a degree. Proposed tree planting would obscure the majority of the buildings and outdoor equipment within the site. Electrical equipment is likely to be visible above the newly established vegetation. Proposed planting would grow to partially screen the

onshore substation and help it become more integrated in the landscape although it would not notably reduce the scale of visual impacts over time. Long term effects would be the same as those assessed upon completion.

430. Effects arising upon completion and once proposed planting has established in the long term, would be on balance, adverse, albeit it the **OLMP** (document reference 9.18) proposals seek to deliver more than just visual mitigation alone. Landscape proposals would create new areas of habitat and ecological enhancements, strengthen green infrastructure and enhance some of the landscape characteristics of the surrounding landscape, which would bring some enhancements to views from the A140 as vegetation matures.

26.6.5.2.2.2 Norwich-Ipswich Railway Line

431. The Norwich-Ipswich Railway Line traverses the study area of the onshore substation from Norwich to the north and heading southwards. The onshore substation site lies approximately 50m west of the railway line.

432. Train passengers are judged to be of a medium sensitivity (medium susceptibility and community value).

433. The greatest effects along the Norwich-Ipswich Railway would occur along the section of the route between the PRoW Stoke Holy Cross BR3 and Hickling Lane. The railway line can be seen in the foreground to the onshore substation in Viewpoint 2 (**Figure 26.18**), illustrating that there would be views of the proposed substation from this section of the railway line. Viewpoint 3 (**Figure 26.19**) lies on a PRoW close to the northern end of the railway line where it passes through the ZVI. Within the northern part of the ZVI south-east of Viewpoint 3 the railway line lies in a cutting and is enclosed by trees, restricting views of the substation.

434. Upon completion, the onshore substation would obscure existing views across arable farmland for a brief part of each journey. It would be in the foreground to the existing pylons and overhead wires and screen parts of them as trains pass the site. Effects arising from the onshore substation would be at most of a large scale. Proposed planting would grow to partially screen the onshore substation although it would not notably reduce the scale of visual impacts over time. This would affect a very limited extent of the overall route (for a very brief period passing the site while travelling on a longer journey) and result in visual effects of a medium magnitude and **moderate significance**. Effects would be **adverse**.

435. Over time, as proposed planting between the substation and the railway line establishes, visibility of the onshore substation would reduce to a degree. However, views to parts of the buildings, outdoor equipment and the electrical equipment are likely to remain through and above the new planting, and during the winter months views through the leafless vegetation would be possible and long term effects would be the same as those assessed upon completion.

26.6.5.2.3 Prow, Permissive Bridleway and Gowthorpe Lane Within The ZVI

436. This group of visual receptors is located within an area of landscape to the south of the established woodland and tree vegetation along the PRoW (Swardeston BR12 and Stoke Holy Cross BR3); to the west of the A140 (Ipswich Road); north of Hickling Lane; and east of Gowthorpe Lane.

437. **Figure 26.15** show the extent of the ZVI of the onshore substation. **Figure 26.16** shows the landscape context within this area, including PRoWs (with references) and Gowthorpe Lane, and the location of representative viewpoints.

438. The following PRoWs lie within this visual receptor group. Views are represented by Viewpoints 1 to 3 (**Figures 26.17** to **26.19**):

- PRoW to the north of the onshore substation
    - Bridleway (Stoke Holy Cross BR3) – Viewpoint 3 (**Figure 26.19**)
    - Bridleway (Swardeston BR12)
- Permissive bridleway to the east of the onshore substation
    - Permissive bridleway west of A140 – Viewpoint 2 (**Figure 26.18**)
    - PRoW to the west of the onshore substation
- Bridleway (Swardeston BR9) – Viewpoint 1 (**Figure 26.17**)
    - Bridleway (Swainsthorpe BR7)
    - Bridleway (Swardeston BR11)
- PRoW to the south of the onshore substation
    - Bridleway Open to All Traffic (BOAT) (Swainsthorpe BOAT6, on Hickling Lane)

439. In addition, Gowthorpe Lane (a minor road) lies on the western edge of this receptor group.

440. Users of these PRoWs and permissive bridleway would be of a high susceptibility, and users of Gowthorpe Lane medium susceptibility. They would both be of community value. Effects on the PRoW, permissive bridleway and road are assessed as a group so, for the purpose of this impact assessment, the higher level of sensitivity is used which applies to the PRoW and permissive bridleway. Visual receptors within the visual receptor group would be of a high – medium sensitivity.

441. Visual effects arising from the onshore substation would vary dependent on the location of the visual receptors and whether there is woodland, hedgerow or scrub vegetation between the receptor and the site. It can be seen that large to small scale effects would occur from parts of the PRoWs and permissive bridleway, represented by Viewpoints 1 to 3 (**Figures 26.17** to **26.19**).

442. Although the existing Norwich Main substation lies within close proximity to the north of the substation, it is not visible from the majority of these routes, being screened by the existing mature woodland belt immediately north of the onshore substation.

443. The visual effects that could be experienced by users of the PRoW within the ZVI of the onshore substation are assessed in detail in the following sections.

26.6.5.2.3.1 PRoW to the North of the Onshore Substation

444. PRoW Stoke Holy Cross BR3 and Swardeston BR12 form a continuous west-east route between Swardeston BR9 and the A140. From the majority of this route views of the substation would be filtered or obscured by existing vegetation south of the route. However, views to the onshore substation would be available from some

sections of the PRoW route where gaps in the existing vegetation allow views southwards, as illustrated by Viewpoint 3 (**Figure 26.19**).

445. Norwich Main substation is visible to the north, filtered through trees, from part of this route. Some of the existing woodland to the east of Norwich Main substation would be removed to facilitate construction of the construction/operational phase access road, potentially increasing visibility of the Norwich Main substation.

446. Upon completion of construction, views of the onshore substation, permanent access road and attenuation basin would be most apparent from the eastern extent of the PRoW route, represented by Viewpoint 3 (**Figure 26.19**) (assessed as large-scale effect). This open view would only be possible for short stretches of the PRoW route. From the western extent of the PRoW route vegetation south-east of the PRoW would filter or obscure views of the substation to a greater degree. The onshore substation would be visible but partially screened by intervening existing vegetation from the western extent of the route, where gaps in vegetation allow. From the western section of the route, effects are assessed to be small scale.

447. The substation would be seen in the context of the existing line of pylons crossing the fields to the west of the site.

448. As proposed planting matures, landscape mitigation proposals (as set out in the **OLMP**, document reference 9.18) indicate that new vegetation would be planted to the immediate south of the PRoW, comprising native trees and shrubs that are reflective of the wider landscape character and connect the existing woodland belts. A gap where vegetation has been removed to permit the construction road will have been reinstated. Once the new planting has established, views of the substation are likely to be obscured during summer, but possible through the vegetation in winter. Long term effects would be the same as those assessed upon completion.

26.6.5.2.3.2 Permissive Bridleway to the East of the Onshore Substation

449. On completion of construction, views of the onshore substation would be available from the majority of the permissive bridleway which runs north to south and parallel to the A140. Fieldwork has identified that, walking along the route, the degree of visibility of the onshore substation would vary due to distance to the site, the angle of view and the degree of screening by intervening existing vegetation. This would vary the scale of effect on the receptor.

450. Viewpoint 2 (**Figure 26.18**) (effects assessed as large scale) represents the greatest potential visibility of the substation from the route.

451. The onshore substation would be visible beyond existing vegetation and electrical cables along the railway line and would be in the foreground to the existing pylons and overhead wires. The maximum height parameters shown in **Figure 26.18** illustrate that parts of the substation would have potential to appear taller than the existing pylons in the views and could screen existing pylons and associated wires.

452. As proposed planting matures, landscape mitigation proposals (as set out in the **OLMP**, document reference 9.18) indicate that an area of native woodland would be planted between the substation and the railway line, reflecting the wooded landscape character found further north and south of the substation. As the proposed tree planting matures, visibility of the ground level equipment/buildings of the substation would gradually reduce, albeit the electrical equipment is likely to

remain visible above. Once the new planting has established, views of lower elements of the substation are likely to be obscured during summer, but possible through the vegetation in winter. Long term effects would be the same as those assessed upon completion.

26.6.5.2.3.3 PRoW to the West of the Onshore Substation

453. PRoWs Swainsthorpe BR7 and Swardeston BR9 form a continuous north – south route between Mangreen Lane and Gowthorpe Lane. The northern section of PRoW Swardeston BR9 lies outside the ZVI. PRoW Swardeston BR11 runs west-east between Gowthorpe Lane and the southern section of the PRoW Swardeston BR9, which lies within the ZVI.

454. On completion of construction, views of the onshore substation would be available from parts of these PRoWs. An existing tall mature hedgerow and two areas of existing woodland lie immediately east of the majority of the Swainsthorpe BR7/Swardeston BR9 route within the ZVI, obscuring or heavily filtering views towards the substation. Views are currently more open from approximately 130m of the northern section of the route (on Swardeston BR9) where Viewpoint 1 (**Figure 26.17**) is located.

455. As seen in Viewpoint 1 (**Figure 26.17**) (assessed as small-scale effect) at a location where it is possible to see over an immature hedge east of the route, intervening vegetation and landform further east would screen much of the substation from view, broadly restricting visibility to the upper parts of the buildings, outdoor equipment and electrical equipment. Where visibility is possible, the substation would be seen beyond exiting pylons and overhead wires, which would appear taller than the substation in these views. The immature foreground hedge is likely to grow and obscure views further in the future.

456. As proposed planting matures, landscape mitigation proposals (as set out in the **OLMP**, document reference 9.18) indicate that an area of native trees would be planted to the north-west of the substation, alongside enhancement of hedgerows between this PRoW and the substation site. As proposed planting matures visibility of the ground level equipment/buildings of the substation would gradually reduce, albeit the electrical equipment is likely to remain visible above. Once the new planting has established, views of lower elements of the substation are likely to be obscured during summer, but possible through the vegetation in winter. Long term effects would be the same as those assessed upon completion.

26.6.5.2.3.4 PRoW to the South of the Onshore Substation

457. Swainsthorpe BOAT6 runs along Hickling Lane, between Gowthorpe Lane in the west and the A140 in the east.

458. An established tree belt and woodland along PRoW restricts views northwards to the onshore substation site from the majority of the route. Views would be possible from limited locations where vegetation is sparser and there are gaps including where the PRoW crosses over the Norwich-Ipswich Railway.

459. It is likely that the onshore cable corridor would connect to the substation from the south, passing under this existing tree belt via a trenchless crossing. For the

purpose of this assessment, it is assumed that there would be no loss of the existing vegetation along Hickling Lane due to the onshore cable corridor.

460. On completion of construction, from locations where views would be available, views to the onshore substation would be of a large scale. The onshore substation would be seen within the context of exiting pylons and overhead wires. It would not be visible from the majority of the route. No components of the onshore substation would be taller than the infrastructure visibly present in existing views.

461. As proposed planting matures, landscape mitigation proposals (as set out in the **OLMP**, document reference 9.18) indicate that new areas of tree and shrub planting would be planted to the south of the substation. As proposed planting matures, visibility of the ground level equipment/buildings of the substation would gradually reduce. Once the new planting has established, views of lower elements of the substation are likely to be obscured during summer, but possible through the vegetation in winter. Long term effects would be the same as those assessed upon completion.

26.6.5.2.3.5 Gowthorpe Lane

462. Gowthorpe Lane is located on the western edge of the ZVI. A hedgerow runs continuously along the east side of the road and would screen views of the substation upon completion for all road users except those in higher vehicles who may be able to see over the hedgerow. There is further woodland and hedgerow vegetation east of this roadside hedgerow that would also screen or filter views. Proposed planting between Gowthorpe Lane and the substation is likely to provide further screening as it matures. If parts of the substation are visible, they would be seen in the context of existing pylons and overhead wires and effects would be the same upon completion and in the long term.

26.6.5.2.3.6 Assessment of PRoWs, Permissive Bridleway and Gowthorpe Lane within the ZVI

463. Effects on users of these PRoWs, permissive bridleway and Gowthorpe Lane would range from large scale at PRoWs closest to the site, where gaps in vegetation allow, to medium, small and negligible scale with increasing distance and where vegetation and landform screen or filter views, as reflected in **Table 26-14**.

464. Upon completion of construction, views to the onshore substation would be most apparent and lead to large scale effects where there are gaps in existing vegetation along the closest PRoWs and the permissive bridleway to the north, east and south of the site. Where there are no gaps, or existing vegetation/landform obscures or heavily filters views, effects would be less.

465. This would affect a localised extent of the receptor group and result in, upon completion, visual effects of high magnitude and **major** significance. Effects would be adverse.

466. Over time, as proposed planting around the onshore substation establishes, visibility of the substation would reduce to a degree. Proposed tree and shrub planting would obscure the majority of buildings and outdoor equipment within the site. Electrical equipment is likely to be visible above the newly established vegetation.

467. Whilst the proposed planting would reduce visibility of the onshore substation, effects would remain large scale. Views to part of the building, outdoor equipment, electrical equipment and access road are likely to remain above the new planting, and during the winter months, views through the leafless vegetation would be possible. Users of the PRoW, permissive bridleway and Gowthorpe Lane would potentially experience partial views to components of the onshore substation through the vegetation.

468. This would continue to affect a localised extent of the receptor group and result in visual effects of high magnitude and **major** significance. Whilst effects would remain adverse, the **OLMP** (document reference 9.18) proposals seek to deliver more than just visual mitigation alone. Landscape proposals set out plans to create new areas of habitat and ecological enhancements; strengthen green infrastructure across the site and its surroundings; and enhance some of the key landscape characteristics of the surrounding landscape.

26.6.6 Potential Impacts during Decommissioning – Onshore Cable Corridor and Substation

26.6.6.1 Onshore Cable Corridor

469. The approach to decommissioning has not yet been defined; however, cable ducts are expected to be left in the ground without the need to re-excavate and there would be very limited potential for landscape or visual effects associated with this during decommissioning.

26.6.6.2 Onshore Substation

470. As set out in **Section 26.3.2.4**, given the temporary duration of the decommissioning phases compared to the longer-term duration of the operational phases of SEP and/or DEP, potential effects during decommissioning would not be greater than those experienced during the operation of the onshore substation and could potentially be less due to the shorter-term durations.

471. A summary of the effects that are likely to arise during decommissioning is presented in **Appendix 26.1 LVIA Annexes**.

26.7 Cumulative Impacts

26.7.1 Identification of Potential Cumulative Impacts

472. The first step in the cumulative assessment is the identification of which residual impacts assessed for SEP and/or DEP on their own have the potential for a cumulative impact with other plans, projects and activities (described as ‘impact screening’). As set out **Section 26.4.4**, developments that are subject to a valid planning application are included where specific circumstances indicate there is potential for cumulative effects to occur, with progressively decreasing emphasis placed on those which are less certain to proceed.

473. Operational and consented developments are in general treated as being part of the landscape and visual baseline i.e. it is assumed that consented schemes will be built except for occasional exceptions where there is good reason to assume that they

will not be constructed. Where it has been identified that there is a realistic potential for the construction phase of the SEP and DEP onshore cable corridor to overlap with the construction of other nearby consented schemes, these schemes have also been included in the CIA.

474. The information set out in **Table 26-15** identifies those potential impacts from **Section 26.6** that would be of a slight significance or above. Where the significance of impact on landscape and visual receptors resulting from the SEP and/or DEP Projects alone is assessed to be minimal, it is considered that the effect is of such limited significance that it cannot therefore contribute towards any notable cumulative effect. In this case, an assessment of cumulative effects on the receptors in question is not required as effects would not be significant.

475. **Table 26-15** concludes that in relation to landscape and visual receptors, effects would be highly localised to the immediate contexts of the onshore cable corridor and the onshore substation. Only where there is potential for other relevant projects to be located near to or cross the onshore components of the SEP and DEP sites are potential cumulative effects likely to occur.

Table 26-15: Potential Cumulative Impacts (Impact Screening)

Impact	Potential for Cumulative Impact	Rationale
Construction Phase		
Onshore Cable Corridor		
Landscape Character	Yes	There is potential that other projects, in combination with the SEP and/or DEP onshore cable corridor, could give rise to cumulative effects. However, as set out in **Sections 26.5** and **26.6**, there would be little to no visibility of SEP and/or DEP cable construction works beyond the immediate context of the onshore cable corridor. There would only be potential for cumulative effects where there is an overlap of effects arising from the onshore cable corridor and other projects.
Visual Receptor	Yes	
Onshore Substation		
Landscape Character	Yes	There is potential that other projects, in combination with the SEP and/or DEP substation, would give rise to cumulative effects. There would be little to no visibility of the SEP and/or DEP substation beyond the immediate context defined by the ZVI described in **Section 26.5.3**. There would only be potential for cumulative effects where there is an overlap of effects arising from the onshore substation and other projects, or where users of a route (e.g. road) would see more than one project sequentially.
Visual Receptors	Yes	
Operational Phase		
Onshore Substation		

Impact	Potential for Cumulative Impact	Rationale
Landscape Character	Yes	There is potential that other projects, in combination with the SEP and DEP substation, would give rise to cumulative effects. However, as set out in **Sections 26.5** and **26.6**, there would be little to no visibility of the SEP and DEP substation beyond the immediate context defined by the ZVI. There would only be potential for cumulative effects where there is an overlap of effects arising from the onshore substation and another projects, or where users of a route (e.g. road) would see more than one project sequentially.
Visual Receptors	Yes	
Decommissioning Phase		
Onshore Cable Corridor		
Landscape Character	Yes	As set out in **Section 26.6.6.1**, cable ducts are expected to be left in the ground without the need to re-excavate and there would be very limited potential for landscape or visual effects associated with this during decommissioning of SEP and/or DEP.
Visual Receptors	Yes	
Onshore Substation		
Landscape Character	Yes	There is potential that other projects, in combination with the SEP and DEP substation, would give rise to cumulative effects. There would be little to no visibility of the SEP and/or DEP substation beyond the immediate context defined by the ZVI described in **Section 26.5.3**. There would only be potential for cumulative effects where there is an overlap of effects arising from the onshore substation and other projects, or where users of a route (e.g. road) would see more than one project sequentially.
Visual Receptors	Yes	

26.7.2 Other Plans, Projects and Activities

476. The second step in the cumulative assessment is the identification of the other plans, projects and activities that may result in cumulative impacts for inclusion in the CIA (described as ‘project screening’).

477. This information is set out in **Table 26-16** below, together with a consideration of the relevant details of each, including current status (e.g. under construction), planned construction period, closest distance to SEP and DEP, status of available data and rationale for including or excluding from the assessment.

478. The project screening has been informed by the development of a CIA Project List which forms an exhaustive list of plans, projects and activities in a very large study area relevant to SEP and DEP. The list has been appraised, based on the confidence in being able to undertake an assessment from the information and data available, enabling individual plans, projects and activities to be screened in or out.

Table 26-16: Summary of Projects Considered for the CIA in Relation to Landscape and Visual Receptors (Project Screening)

Project	Status	Construction Period	Closest Distance from the Project	Confidence in Data	Included in the CIA (Y/N)	Rationale
Onshore Cable Corridor						
Hornsea Project Three Offshore Wind Farm	DCO Consented	2023-2025 (single phase) 2023-2031 (two phase)	Hornsea Three cable corridor would cross SEP and DEP onshore cable corridor south-east of Weston Longville and the connection between the Hornsea Three onshore substation would lie to the north of the SEP and DEP onshore substation site. The landfall site would be located nearby at Weybourne.	High	Yes	There would be potential for the effects on landscape and visual receptors to overlap, and therefore taken forward to the CIA in **Section 26.7.3**.
Norfolk Vanguard	DCO Consented	2023 – 2029	Norfolk Vanguard and Norfolk Boreas share the same onshore cable corridor and would cross the SEP and DEP onshore cable corridor north of Cawston.	High	Yes	There would be potential for the effects on landscape and visual receptors to overlap, and therefore taken forward to the CIA in **Section 26.7.3**.
Norfolk Boreas Offshore Windfarm	DCO Consented	2023 – 2029		High	Yes	
A47 North Tuddenham to Easton	DCO examination	2022/23-2024/25	The onshore cable corridor route would cross this section of the A47	High	No	The construction periods may overlap in 2024. The onshore cable corridor would HDD under this road and lead to limited, short-term effects that would be much smaller in scale than the A47 works, and not lead to any cumulative effects. It is therefore not taken forward to the CIA.

Project	Status	Construction Period	Closest Distance from the Project	Confidence in Data	Included in the CIA (Y/N)	Rationale
East Anglia Green Energy Enablement (GREEN) Project	Pre-examination (submission expected Q4 2024)	2027 – 2031	The alignment and location of the proposed works would likely cross the route of the onshore cable corridor.	Moderate	Yes	There would be potential for the effects on landscape and visual receptors to overlap, and therefore taken forward to the CIA in **Section 26.7.3**.
Onshore Substation						
No applicable schemes have been identified at the time of assessment						
Hornsea Project Three Offshore Wind Farm substation	DCO Consented	2023-2025 (single phase) 2023-2031 (two phase)	1.4km, NW	High	No	As set out in **Table 26-15** and in **Section 26.5.3** there would be little to no visibility beyond the immediate context of the SEP/DEP substation; and the ZVIs of SEP/DEP and Hornsea Three substation would not overlap. It is unlikely that SEP and DEP substation would be visible to a great degree with Hornsea Three substation from any locations due to screening effects of intervening vegetation. The construction phases of each project to complete cable connection to Norwich main substation are also unlikely to overlap. The combined cumulative impacts would be unlikely to give rise to effects greater than those of SEP and/or DEP Projects alone.

Project	Status	Construction Period	Closest Distance from the Project	Confidence in Data	Included in the CIA (Y/N)	Rationale
East Anglia Green Energy Enablement (GREEN) Project	Pre-examination (submission expected Q4 2024)	2027 – 2031	The alignment and location of the proposed works could potentially cross the land within the Order Limits to the immediate west of the substation.	Moderate	Yes	There would be potential for the effects on landscape and visual receptors to overlap, and therefore taken forward to the CIA in **Section 26.7.3**.

26.7.3 Assessment of Cumulative Impacts

479. Having established the residual impacts from SEP and/or DEP with the potential for a cumulative impact, along with the other relevant plans, projects and activities, the following sections provide an assessment of the level of impact that may arise as a result of the onshore cable corridor and the substation.

480. For the purposes of this cumulative assessment, information presented in National Grid's 'Project Background Document', which was published in support of their first stage of public consultation in Spring 2022, has been used. Given the wide area of the preferred route option in which the East Anglia Green Energy Enablement (GREEN) Project could be installed, it is assumed that, in RWCS, it would be located as close to the SEP and/or DEP substation as possible.

26.7.3.1 Construction Phase

481. The effects of other projects in construction would vary according to their scale – for example it can be expected that the construction of a development of a large scale would involve a significant construction project over a number of years; whereas the construction of a smaller scale development would be completed more rapidly and involve a smaller scale of activity.

26.7.3.1.1 Onshore Cable Corridor

26.7.3.1.1.1 Cumulative Landscape Effects

482. As set out in **Section 26.6.2.1**, landscape effects resulting from the construction of the onshore cable corridor would range from **moderate adverse**, to **negligible neutral significance**. Should the Hornsea Project Three offshore wind farm; Norfolk Vanguard offshore wind farm; Norfolk Boreas offshore wind farm and/or the East Anglia Green Energy Enablement (GREEN) Project be constructed within the construction phase of the SEP and/or DEP, the combined effects on the existing landscape character would occur to a limited area where routes cross at Weston Longville and Cawston; where corridors run close to each other; at the landfall site located near Weybourne; and near to the onshore substation. Within these limited areas, the combined duration is still likely to be short-term (with small areas of longer-term effects due to vegetation removal and replacement), and cumulative effects on landscape character are unlikely to be significant.

483. The combination of effects of SEP and/or DEP and the other projects are unlikely to be greater than any of the projects on their own, and there would be no notable cumulative visual effects arising from SEP and/or DEP.

26.7.3.1.1.2 Cumulative Visual Effects

484. The only visual effects of the construction of the SEP and/or DEP onshore cable corridor that would result in impacts greater than negligible magnitude occur as a result of large-scale effects occurring over a limited or localised spatial extent for a short-term duration. In order for cumulative effects with another development to occur that are greater than for those of SEP and/or DEP alone, they would either

have to notably increase the extent of effects or the duration as the scale cannot be increased further.

485. Where this arises, it would involve developments that in themselves have notably greater effects than those of SEP and/or DEP, and the addition of the relatively smaller effects arising from the SEP and/or DEP would not give rise to a greater cumulative effect.

486. Therefore, the combination of effects of SEP and/or DEP and the other projects are unlikely to be greater than SEP and/or DEP alone.

26.7.3.1.2 Onshore Substation

26.7.3.1.2.1 Cumulative Landscape Effects

487. Should the construction phases of the East Anglia Green Energy Enablement (GREEN) Project and the SEP and/or DEP substation occur at the same time, there is potential, in a RWCS, that the construction areas of each project might overlap. It is judged however that each project's construction would be limited in area and similar in nature. The combined duration is likely to be short-term (with small areas of longer-term effects due to vegetation removal and replacement) and cumulative effects on landscape character are unlikely to be significant. The combination of effects of SEP and/or DEP and the East Anglia Green Energy Enablement (GREEN) Project are unlikely to be greater than any of the projects on their own, and there would be no notable cumulative visual effects arising from SEP and/or DEP.

26.7.3.1.2.2 Cumulative Visual Effects

488. Should the construction phases of the East Anglia Green Energy Enablement (GREEN) Project and the SEP and/or DEP substation occur at the same time, there would be little potential for cumulative visual effects, except where each project's construction activities might be visible from the Public Rights of Way that surround the SEP and/or DEP substation; the A140; and the Norwich-Ipswich railway to south and south-east of the onshore substation. In a RWCS, visual receptors using these routes would be likely to see the construction of both projects concurrently and/or sequentially from limited lengths of the routes. However, given the short sections of each route in which these potential cumulative effects could occur, it is judged that potential cumulative effects of SEP and/or DEP and East Anglia Green Energy Enablement (GREEN) Project would be no greater than SEP and/or DEP alone.

26.7.3.2 Operational Phase

26.7.3.2.1 Onshore Substation

26.7.3.2.1.1 Cumulative Landscape Effects

489. As set out in **Section 26.6.5.1**, the greatest effects on the prevailing landscape character – B1 Tas Tributary Farmland – would arise within the onshore substation itself, where there would be a direct change to the present land-use from agricultural farmland to an electrical substation and visibility of the new development would be possible from locations in close proximity. Effects on landscape character would only occur within the area covered by the ZVI as described in **Section 26.5.3**.

Should the East Anglia Green Energy Enablement (GREEN) Project be located and operate within the extent of the ZVI of the SEP and/or DEP substation, it is judged that cumulative effects on landscape character are unlikely to be significant, as this project's proposals to install new overhead 400kV cables and steel lattice pylons which would be similar in nature to the existing overhead cables and pylon already found within the landscape in close proximity to the onshore substation. Given that overhead cables and pylons already form part of the prevailing landscape character, the potential cumulative effects of SEP and/or DEP and East Anglia Green Energy Enablement (GREEN) Project would be no greater than SEP and/or DEP alone.

26.7.3.2.1.2 Cumulative Visual Effects

490. Visibility of each scheme would be possible from Public Rights of Way that surround the SEP and/or DEP substation; the A140; and the Norwich-Ipswich railway to south and south-east of the onshore substation. However, should the East Anglia Green Energy Enablement (GREEN) Project be located and operate within the extent of the ZVI of the SEP and/or DEP substation, it is judged that cumulative effects on visual receptors are unlikely to be significant, as this project's proposals to install new overhead 400kV cables and steel lattice pylons which would be similar in nature to the existing overhead cables and pylon already found within the landscape in close proximity to the onshore substation. Given that overhead cables and pylons already form part of existing views, the potential cumulative effects of SEP and/or DEP and East Anglia Green Energy Enablement (GREEN) Project would be no greater than SEP and/or DEP alone.

26.7.3.3 Decommissioning Phase

491. No developments have been identified that require consideration in respect of cumulative effects during decommissioning.

26.8 Transboundary Impacts

492. Transboundary effects have been scoped out of the LVIA as it has been judged that no significant transboundary effects would arise as a consequence of either the onshore cable corridor or the onshore substation, since these components of SEP and DEP fall entirely within the jurisdiction of the UK, and no European Union (EU) member state would have visibility of the construction, operation or decommissioning phases of the onshore components of SEP and DEP.

26.9 Inter-relationships

493. Inter-relationships are considered to be the impacts and associated effects of different aspects of the onshore cable corridor and the onshore substation on the same receptor. In the LVIA, these inter-related effects are considered to be receptor led effects, where specific receptors may be affected by both the construction and operation of the onshore infrastructure (i.e. onshore substation, onshore cable corridor, landfall location and National Grid infrastructure) and the construction and operation of the offshore infrastructure (including wind farm site, offshore platforms, offshore cable corridor). There is potential for effects to interact, spatially and temporally, to create inter-related effects on a receptor.

26.9.1 Inter-related landscape and visual effects between offshore and onshore development

494. The assessment presented in **Chapter 25 SVIA** and the LVIA presented in this chapter together provide an assessment of potential impacts on seascape and landscape character; views and visual amenity; and designated and defined landscapes which might arise as a consequence of SEP and/or DEP both offshore and onshore.

495. The majority of LCAs, visual receptors and designated and defined landscapes in the LVIA study areas would not experience inter-related landscape and/or visual effects, since they have either no visibility, or limited or distant visibility, of both the construction of the offshore infrastructure and the construction of the onshore infrastructure, and therefore have limited potential for inter-related (or combined) effects to occur.

496. Inter-related landscape and visual effects between offshore and onshore development would only occur on those LCAs, visual receptors and designated and defined landscapes near the landfall, where the construction of the onshore infrastructure (landfall and onshore cable corridor) would occur in areas that may also be affected by changes resulting from views of the construction of the offshore infrastructure.

497. Based on the offshore (**Chapter 25 SVIA**) and onshore (this chapter) assessments undertaken, it is assessed that inter-related landscape and visual effects would be limited to areas in close proximity to the landfall site at Weyborne. During the construction of the landfall and onshore cable corridor together with the construction of the offshore infrastructure, the construction periods may overlap.

498. In reality, the programming would mean there would likely be some degree of separation between the construction of the onshore infrastructure and construction of the offshore infrastructure. The period over which inter-related landscape and/or visual effects on seascape, landscape and visual receptors might occur would be limited to a short-term and temporary period, and within a limited geographical area of coast, during the construction phase and is unlikely to give rise to impacts greater than assessed in this chapter and **Appendix 26.1 LVIA Annexes** for the onshore cable corridor alone.

26.9.2 Inter-related effects with other sources of impact

499. Inter-related effects between visual impacts presented in this chapter and other potential sources of impact, such as noise, air quality and traffic, are possible as a consequence of the onshore development of SEP and/or DEP, especially during the construction phase of the Projects. There are unlikely to be inter-related effects between landscape impacts and other potential sources of impact on landscape receptors.

500. The potential inter-related visual effects with other sources of impact are likely to be limited to areas in close proximity to any construction works being undertaken, and likely only to be experienced for a temporary period.

501. Those chapters that assess impacts which could potentially give rise to inter-related effects are as follows:

- **Chapter 22 Air Quality;**
- **Chapter 23 Noise and Vibration**; and
- **Chapter 24 Traffic and Transport**.

502. A summary of the potential inter-relationships is provided in **Table 26-17**.

Table 26-17: Landscape and Visual Inter-Relationships

Impact/receptor	Related Chapter	Where Addressed in this Chapter	Rationale
Construction			
Onshore Cable Corridor			
Effects on Landscape Character	• **Chapter 22 Air Quality**; • **Chapter 23 Noise and Vibration**; and • **Chapter 24 Traffic and Transport**.	N/A	No additional inter-related effects on landscape character, have been identified for these receptors during construction, which would increase the effects presented in **Section 26.5.4.3.1**.
Effects on Visual Receptors		N/A	No additional inter-related effects on visual receptors, have been identified for these receptors during construction, which would increase the effects presented in **Section 26.5.5.1**.
Effects on Designated Landscapes Referred to by Policy		N/A	No additional inter-related effects on visual receptors, have been identified for these receptors during construction, which would increase the effects presented in **Section 26.6.2.3**.
Onshore Substation			
Impacts associated with the construction phase would be no greater than those identified for the operational phase.			
Operation			
Onshore Cable Corridor			
Impacts associated with the operational phase would be no greater than those identified for the construction phase.			
Onshore Substation			
Effects on Landscape Character	• **Chapter 22 Air Quality**;	N/A	No additional inter-related effects on landscape character,

Impact/receptor	Related Chapter	Where Addressed in this Chapter	Rationale
	• **Chapter 23 Noise and Vibration**; and • **Chapter 24 Traffic and Transport**.		have been identified for these receptors during operation, which would increase the effects presented in **Section 26.6.5.1**.
Effects on Visual Receptors		N/A	No additional inter-related effects on visual receptors, have been identified for these receptors during operation, which would increase the effects presented in **Section 26.6.5.2**.
Decommissioning			
Impacts associated with the decommissioning phase would be no greater than those identified for the construction phase.			

26.10 Interactions

503. The impacts identified and assessed in this chapter have the potential to interact with each other. The areas of potential interaction between impacts are presented in **Table 26-18**. This provides a screening tool for which impacts have the potential to interact. **Table 26-19** provides an assessment for each receptor (or receptor group) as related to these impacts.

504. Within **Table 26-19** the impacts are assessed relative to each development phase (Phase assessment - i.e. construction, operation or decommissioning) to see if (for example) multiple construction impacts affecting the same receptor could increase the level of impact upon that receptor. Following this, a lifetime assessment is undertaken which considers the potential for impacts to affect receptors across all development phases.

505. The significance of each individual impact is determined by the sensitivity of the receptor and the magnitude of effect; the sensitivity is constant whereas the magnitude may differ. Therefore, when considering the potential for impacts to be additive it is the magnitude of effect which is important – the magnitudes of the different effects are combined upon the same sensitivity receptor.

Table 26-18: Interaction between Impacts - Screening

Potential Interaction between Impacts – Construction, Operation, Decommission			
Construction			
	1. Impacts on landscape character	2. Impacts on views and visual amenity (visual receptors)	3. Impacts on designated and defined landscapes, and River Valley landscapes referred to by policy
1. Impacts on landscape character	-	Yes	Yes
2. Impacts on views and visual amenity (visual receptors)	Yes	-	Yes
3. Impacts on designated and defined landscapes, and River Valley landscapes referred to by policy	Yes	Yes	-

Table 26-19: Interaction between Impacts – Phase and Lifetime Assessment

	Highest Significance Level				
Receptor	Construction	Operation	Decommissioning	Phase Assessment	Lifetime Assessment
Onshore Cable Corridor					
Landscape Character	Moderate – slight locally, adverse	No effect	No effect	No greater than individually assessed impact	No greater than individually assessed impact
Visual receptors	Moderate locally adverse	No effect	No effect	No greater than individually assessed impact	No greater than individually assessed impact
Designated landscapes (AONB)	Slight locally, adverse	No effect	No effect	No greater than individually assessed impact	No greater than individually assessed impact

	Highest Significance Level				
South Norfolk River Valleys referred to by Policy DM 4.5	Minimal locally, adverse	No effect	No effect	No greater than individually assessed impact	No greater than individually assessed impact
Onshore Substation					
Landscape Character	Moderate locally, adverse	Moderate locally, adverse	Moderate locally, adverse	No greater than individually assessed impact	No greater than individually assessed impact.
Visual receptors	Major locally adverse	Major locally adverse	Major locally adverse	No greater than individually assessed impact	No greater than individually assessed impact.

26.11 Potential Monitoring Requirements

506. As set out in the **OLMP** (document reference 9.18), new tree, hedgerow and shrub planting will be maintained and, if any fail, replaced for ten years within the extent of the onshore cable corridor and for lifetime of the onshore substation following implementation of planting. Full details of the management activities that will be undertaken at any location with proposed planting to ensure successful establishment of the new planting will be provided post DCO consent.

507. No additional monitoring requirements are identified in light of the conclusions of the LVIA.

26.12 Assessment Summary

508. This chapter has provided a characterisation of the existing environment for the LVIA based on both existing data and site specific survey data, which has established that there would be some potential impacts on landscape and visual receptors and on a designated landscape and landscapes referred to by policy during construction, operation and decommissioning phases of SEP and/or DEP.

509. The RWCSs for SEP and/or DEP have been assessed for the onshore cable corridor and the onshore substation.

510. The RWCS for the construction of the onshore cable corridor and the onshore substation is with SEP and DEP built sequentially with four years between the commencement of construction of each Project (seven years total construction time for both SEP and DEP). However, it is assessed that in light of the various possible scenarios of SEP and DEP, should they be developed in isolation or together (either concurrently or sequentially), there would be no material difference in the resultant impacts between the various Project scenarios.

511. For the onshore cable corridor, the RWCS would occur during the construction phase and result from the maximum construction duration and land-take. During operation the onshore cable corridor would be buried and not result in any landscape or visual effects, except for effects as replacement planting matures, and where trees are not replaced over the cable easement. These effects on vegetation have been factored into the visual effects assessed during the construction phase. Link boxes would be buried at a frequency of one every 1km along the onshore cable corridor with a secured access panel visible on the ground surface with an above ground maker post, which would not result in any significant effects. Cable ducts would be left in the ground and trenches would not be re-excavated during decommissioning, and there would be no landscape or visual effects during the decommissioning phase.

512. For the onshore substation, the greatest effects are likely to occur during operation due to the longer-term duration than the construction and decommissioning phases and result from the maximum footprint and height parameters. However, the summary of potential effects during the construction and decommissioning phases presented in **Appendix 26.1 LVIA Annexes** identifies that the significance of effects on receptors during construction and decommissioning phases would be the same as assessed during the operational phase.

513. Significant effects have been assessed during construction, operation and decommissioning of the onshore substation on users of a group of PRoWs, a permissive bridleway and Gowthorpe Lane which encircle the fields which the site lies within and adjacent to.

514. No other significant effects have been identified related to the construction of SEP or DEP.

515. **Sections 26.12.2** to **26.12.4** below summarise effects during the construction phase of the onshore cable corridor and the operational phase of the onshore substation.

26.12.1 Mitigation Embedded in the Design

516. The LVIA is based on a 'mitigation by design' approach, which means that during the course of the design development of the onshore components for SEP and/or DEP, landscape considerations have been accounted for as an integral part of the design process. These embedded mitigation measures are described in **Chapter 4 Project Description** and the **OLMP** (document reference 9.18).

517. The 'mitigation by design' approach is underpinned by the early decision to minimise the potential effects that might arise as a result of SEP and/or DEP on landscape and/or visual recourse.

518. With regard to the onshore cable corridor, the first key design intervention was to underground the cables, thus avoiding the visual intrusion of new pylons and overhead cables during the operational phase. Subsequent cable routing has been designed to designed to avoid crossing woodlands and areas or groups of trees, where possible. Where this is not possible, all significant woodlands, including Weybourne Wood within the Norfolk Coast AONB, and many smaller woodlands and areas of trees and scrub would be retained where they lie within the cable corridor, by utilising trenchless crossing techniques (See **Chapter 4 Project Description** and **Appendix 4.1 Crossing Schedule**). The same approach (where necessary) is proposed at locations where the cable corridor crosses other features such as settlement, local roads, railways, watercourses and public rights of way. Where such an interaction occurs, an appropriate trenchless crossing technique is proposed to reduce potential effects on any sensitive receptors in so far as possible. For example, at Weybourne Wood (within the Norfolk Coast AONB), the majority of crossing of landscape features – including hedgerows, local roads and railways – are facilitated by the use of trenchless crossing techniques (i.e. HDD).

519. With regards to the onshore substation, two onshore substation sites were assessed following an initial feasibility study and a selection process which considered a number of potential sites. One site has been selected following further site option and feasibility studies, and feedback received during public consultation, and is assessed in this LVIA.

520. Landscape and visual considerations fed into the studies and final site selection process. The final onshore substation site has been identified as the most suitable site from a landscape and visual perspective for a number of reasons including:

- It lies within an area of arable fields enclosed by woodland, tree belts and hedgerows which restricts potential visibility and effects to a relatively small area of landscape.

- The existing woodlands and tree belts provide a context where further tree and woodland planting to integrate the onshore substation into the landscape and provide further screening would be appropriate.
- The site lies within an area already influenced by existing electrical infrastructure including the Norwich Main substation to the north, and lines of pylons and overhead wires, one of which crosses the fields west of the onshore substation site. Other existing infrastructure lies to the east – the Norwich-Stowmarket main railway line and A140. Grid and other infrastructure are already characteristic of this location.
- The onshore substation lies west of LCA A1 Tas Rural River Valley. Policy DM 4.5 of the South Norfolk Development Management Development Document (adopted October 2015) states “Particular regard will be had to protecting the distinctive characteristics, special qualities and geographical extents of the identified Rural River Valleys and Valley Urban Fringe landscape character types”. Assessment identified that the site would not affect this LCA due to the presence of existing tree and woodland vegetation that would largely screen the onshore substation from the LCA.
- There are relatively few sensitive visual receptors within close proximity to the site that have potential to have clear views of the onshore substation, or to be significantly affected.
- There are no residential receptors that would have clear or close views of the onshore substation.
- Site selection is therefore a key part of the embedded mitigation proposals.

521. In accordance with this approach, the LVIA describes the range of appropriate and embedded landscape mitigation measures that address the specific effects predicted to occur. The LVIA is therefore based upon the assumption that they would be implemented, and that there would be an inherent part of the SEP and DEP, and do not require additional action to be taken or further detail provided i.e. they will be embedded into and integral to the final design.

522. An illustrative landscape scheme has been prepared as part of the DCO submission, which is descried in the **OLMP** (document reference 9.18). The **OLMP** sets out the key landscape principles and proposals which form part of the embedded mitigation measures that are considered in the assessment of effects in **Section 26.6**.

26.12.2 Landscape Effects

26.12.2.1 Onshore Cable Corridor – Construction Phase

523. Effects due to the onshore cable corridor construction works would be temporary and short term. Effects due to hedgerow, tree and woodland removal and replanting would last longer while vegetation matures. Where it is not possible to replace trees over the cable easement there would be some permanent effects to limited areas of landscape. Effects on landscape character would be up to low-negligible magnitude

and **moderate-slight significance** at the locations where some areas of woodland are removed and not re-planted. Effects would be negligible magnitude and **minimal significance** for the majority of the landscape of the LCAs, and overall impacts on all LCAs would be negligible magnitude and **minimal significance** and **neutral**. Where effects occur, they would be **adverse**.

26.12.2.2 Onshore Substation – Operational Phase

524. SEP and DEP would affect one LCA B1 Tas Tributary Farmland. Effects would be greatest within the onshore substation itself and its immediate contexts, contained to an area of arable fields enclosed by tree and woodland belts and hedgerows, crossed by a line of pylons and overhead cables. Effects within this contained area (defined as the ZVI illustrated on **Figure 26.15**) would be medium magnitude, **moderate significance** and **adverse**.

525. There are unlikely to be landscape effects outside the ZVI.

526. Overall effects on LCA B1 Tas Tributary Farmland would be negligible magnitude, **minimal significance** and **neutral**.

26.12.3 Visual Effects

26.12.3.1 Onshore Cable Corridor – Construction Phase

26.12.3.1.1 Settlements

527. Construction works would be visible from some settlements as the works pass them for short durations. The degree of visibility and significance of effect would vary between settlements, and the magnitude of the effect would range from **medium-low** to **negligible**. Effects would range from **moderate significance** and **adverse** at the most affected settlements, to **minimal significance** and **neutral**.

26.12.3.1.2 A-Roads and Rail

528. In the case of people travelling by car on A-roads or by train, views of construction activities would tend to be very brief in relation to journey time, seen as the onshore cable corridor is passed, usually at speed. A-roads and railway lines would be crossed by trenchless techniques, with road and rail-side vegetation retained. The magnitude of effects on these receptors would be negligible due to the brief, and temporary short term changes to views. Impacts would be of **minimal significance** and **neutral**.

26.12.3.1.3 Long Distance Walking Routes

529. Users of long distance walking routes would experience views of construction, vegetation removal and planting while they pass the works at a particular location and may be diverted temporarily for short periods during construction. Effects would be medium-low magnitude, **moderate significance** and **adverse**.

26.12.3.1.4 National and Regional Cycle Routes

530. Users of national and regional cycle routes would experience views of construction, vegetation removal and planting while they pass the works at a particular location

and may be diverted temporarily for short periods during construction. Effects would be medium-low magnitude, **slight** significance and adverse.

26.12.3.1.5 Accessible and Recreational Landscapes

531. The onshore cable corridor crosses two accessible and recreational landscapes, both of which lie within the North Norfolk AONB: Weybourne Wood including National Trust (always open) and Open Access Land; and Weybourne beach and future coastal margin. Other accessible and recreational landscapes lie within the onshore cable corridor study area. Effects on users of these accessible recreational landscapes would be medium-low magnitude, **moderate significance** and **adverse**.

532. Effects on visual receptors at other accessible and recreational landscapes would be negligible magnitude, **minimal significance** and **neutral**.

26.12.3.1.6 Local Roads and Public Rights of Way

533. The greatest magnitude effects would be experienced where the onshore cable corridor intersects PRoW and local roads using open trench techniques.

534. Effects on users of PRoW and local roads within the Norfolk Coast AONB would be medium-low magnitude, **moderate significance** and **adverse**. Effects on users of PRoW and local roads outside the Norfolk Coast AONB would be medium-low magnitude, **moderate-slight significance** and **adverse**.

26.12.3.2 Onshore Substation – Operation Phase

535. Visual effects due to the onshore substation are likely to be contained to receptors within or on the edge of the ZVI illustrated on **Figure 26.15**. Effects on the visual receptors within the ZVI are summarised below.

26.12.3.2.1 Roads and Rail (A140 and Norwich-Ipswich Railway Line)

536. Effects on users of the A140 and the Norwich-Ipswich Railway would be limited to short sections of each route as they pass to the east of the substation. Beyond these sections, there would be little to no visibility of the onshore substation.

537. Effects on users of the A140 arising from the onshore substation would be medium magnitude, **slight** significance, and adverse.

538. Effects on people on trains on the Norwich-Ipswich Railway arising from the onshore substation would be medium magnitude, **moderate significance** and **adverse**.

26.12.3.2.2 Prows, A Permissive Bridleway and Gowthorpe Lane within the ZVI

539. This group of visual receptors is located within an area of landscape to the south of the established woodland and tree vegetation along PRoWs Swardeston BR12 and Stoke Holy Cross BR3; to the west of the A140 (Ipswich Road); north of Hickling Lane; and east of Gowthorpe Lane, within the ZVI illustrated on **Figure 26.15**.

540. Effects on people using these routes arising from the onshore substation would be high magnitude, **major significance** (which is significant). Effects would be **adverse**.

26.12.4 Effects on Designated and Defined Landscapes and Landscapes Referred to by Policy

26.12.4.1 Norfolk Coast AONB

541. The onshore cable corridor runs through the Norfolk Coast AONB for approximately 4.8km as shown on **Figure 26.1**. Given the limited potential for the onshore cable corridor (including landfall) to undermine the Qualities of Natural Beauty of the AONB, effects would not be significant. Effects on the Norfolk Coast AONB would be of low-negligible magnitude, **slight significance** and **adverse**.

26.12.4.2 North Norfolk Heritage Coast

542. Construction works at the landfall is likely to be visible from the eastern tip of the NNHC, at a distance of approximately 0.6km or more, for a short-term duration. This would have limited potential to affect the natural beauty or visual amenity of the NNHC. Effects would be negligible magnitude, **minimal significance** and **neutral**.

26.12.4.3 South Norfolk River Valleys Referred to in Policy DM 4.5

543. The onshore cable corridor crosses South Norfolk District LCA A2 Yare/Tiffey Rural River Valley and passes within approximately 80m of LCA A3 Tud Rural River Valley which are referred to in Policy DM 4.5. Effects would be up to low magnitude and moderate significance at the locations where some trees are removed and not re-planted (within LCA A2), reducing to negligible magnitude and **minimal significance** outside these areas. Effects would be negligible magnitude and **minimal significance** for the majority of these River Valley landscapes. Overall effects on these River Valley landscapes would be negligible magnitude, **minimal significance** and **neutral**. Where effects occur, they would be **adverse**.

26.12.5 Assessment Summary Tables

544. Effects on the receptors assessed above are summarised in **Table 26-20**. Significant effects are highlighted in bold.

545. The LVIA is based on a ‘mitigation by design’ approach, as set out in **Section 38** and **Section 26.6.1.** This means that during the course of the preliminary design development of the onshore components for SEP and/or DEP, landscape considerations have been accounted for as an integral part of the design process. Therefore, appropriate landscape mitigation measures required to reduce the effect of the Proposed Development on landscape character and views have been incorporated into the design of the project and the assessment of effects, and it is assumed that this mitigation forms part of the final design. No further mitigation measures have been proposed, and as such, the residual effects are same as those described for long term effects of SEP and/or DEP one proposed planting has established.

Table 26-20: Summary of Potential Impacts on Landscape and Visual Resources

Potential impact	Receptor	Sensitivity	Magnitude	Impact (after embedded mitigation)	Mitigation Measures Proposed	Residual Impact	Cumulative Residual Impact
Construction							
Onshore Cable Corridor							
Landscape Character	Landscape character areas *Within immediate context of onshore cable corridor*	High to medium-low	Low-negligible	Ranging from **moderate to slight Adverse**	No further mitigation in addition to embedded mitigation	Ranging from **moderate to slight Adverse**	None predicted
Landscape Character	Landscape character areas *Overall*	High to medium-low	Negligible	**Minimal Neutral**	No further mitigation in addition to embedded mitigation	**Minimal Neutral**	None predicted
Visual amenity	Settlements	High-medium	Ranging from medium-low to negligible	Ranging from **moderate adverse to negligible neutral**	No further mitigation in addition to embedded mitigation	Ranging from **moderate adverse** to **negligible neutral**	None predicted
Visual amenity	A-roads and rail	Ranging from medium to low	Negligible	**Minimal Neutral**	No further mitigation in addition to embedded mitigation	**Minimal Neutral**	None predicted
Visual amenity	Long distance walking routes Coast Path (Peddars Way, Norfolk Coast Path and England Coast Path)	High	Medium-low	**Moderate Adverse**	No further mitigation in addition to embedded mitigation	**Moderate Adverse**	None predicted

Potential impact	Receptor	Sensitivity	Magnitude	Impact (after embedded mitigation)	Mitigation Measures Proposed	Residual Impact	Cumulative Residual Impact
Visual amenity	Other long distance walking routes	High-medium	Medium-low	**Moderate Adverse**	No further mitigation in addition to embedded mitigation	**Moderate Adverse**	None predicted
Visual amenity	National and regional cycle routes	Medium	Medium-low	**Slight Adverse**	No further mitigation in addition to embedded mitigation	**Slight Adverse**	None predicted
Visual amenity	Accessible and recreational landscapes within AONB – Weybourne Wood Open Access Land	High	Medium-low	**Moderate Adverse**	No further mitigation in addition to embedded mitigation	**Moderate Adverse**	None predicted
Visual amenity	Accessible and recreational landscapes within AONB - other	High	Negligible	**Minimal Neutral**	No further mitigation in addition to embedded mitigation	**Moderate Adverse**	None predicted
Visual amenity	Accessible and recreational landscapes outside AONB	Medium	Negligible	**Minimal Neutral**	No further mitigation in addition to embedded mitigation	**Minimal Neutral**	None predicted
Visual amenity	PRoW within AONB	High	Medium-low	**Moderate Adverse**	No further mitigation in addition to embedded mitigation	**Moderate Adverse**	None predicted

Potential impact	Receptor	Sensitivity	Magnitude	Impact (after embedded mitigation)	Mitigation Measures Proposed	Residual Impact	Cumulative Residual Impact
Visual amenity	PRoW outside AONB	Medium	Medium-low	**Moderate-slight Adverse**	No further mitigation in addition to embedded mitigation	**Moderate-slight Adverse**	None predicted
Visual amenity	Local roads within AONB	High-medium	Medium-low	**Moderate Adverse**	No further mitigation in addition to embedded mitigation	**Moderate Adverse**	None predicted
Visual amenity	Local roads outside AONB	Medium	Medium-low	**Moderate-slight Adverse**	No further mitigation in addition to embedded mitigation	**Moderate-slight Adverse**	None predicted
Impacts on qualities of natural beauty	Norfolk Coast AONB	High	Low-negligible	**Slight Adverse**	No further mitigation in addition to embedded mitigation	**Slight Adverse**	None predicted
Natural beauty or visual amenity	North Norfolk Heritage Coast	High	Negligible	**Minimal Neutral**	No further mitigation in addition to embedded mitigation	**Minimal Neutral**	None predicted
South Norfolk River Valleys protected by Policy DM 4.5	River Valley landscape character areas A2 and A3 *Within immediate context of onshore cable corridor*	High-medium	Low	**Moderate Adverse**	No further mitigation in addition to embedded mitigation	**Moderate Adverse**	None predicted

Potential impact	Receptor	Sensitivity	Magnitude	Impact (after embedded mitigation)	Mitigation Measures Proposed	Residual Impact	Cumulative Residual Impact
South Norfolk River Valleys protected by Policy DM 4.5	River Valley landscape character areas A2 and A3 *Overall*	High-medium	Negligible	**Minimal**	No further mitigation in addition to embedded mitigation	**Minimal Neutral**	None predicted
Onshore Substation							
A summary of effects during the construction phase is presented in **Appendix 26.1 LVIA Annexes**. The significance of effects is assessed to be the same as assessed for the operation phase.							
Operation Phase							
Onshore Cable Corridor							
As set out in **Section 26.3.2**, the greatest effects would occur during the construction phase of the SEP and DEP onshore cable corridor. Potential longer-term effects beyond the construction phase due to vegetation removal and reinstatement have been factored into the effects assessed during the construction phase summarised above.							
Onshore Substation							
Landscape Character	B1. Tas Tributary Farmland *Within the substation site and its immediate context - Medium term and Permanent effects*	Medium – Low	Medium	**Moderate Adverse**	None	**Moderate Adverse**	None predicted
Landscape Character	B1. Tas Tributary Farmland *Overall - Medium term and Permanent effects*	Medium – Low	Negligible	**Minimal Neutral**	None	**Minimal Neutral**	None predicted
Visual amenity	A140 *Within immediate context of substation*	Low	Medium	**Slight Adverse**	None	**Slight Adverse**	None predicted

Potential impact	Receptor	Sensitivity	Magnitude	Impact (after embedded mitigation)	Mitigation Measures Proposed	Residual Impact	Cumulative Residual Impact
	Site - Medium term and Permanent effects						
Visual amenity	Norwich-Ipswich Railway Line *Within immediate context of substation Site - Medium term and Permanent effects*	Medium	Medium	**Moderate Adverse**	None	**Moderate Adverse**	None predicted
Visual amenity	PRoWs, permissive bridleway and Gowthorpe Lane within the ZVI *Within immediate context of substation Site - Medium term and Permanent effects*	High – Medium	High	**Major Adverse**	None	**Major Adverse**	None predicted
Decommissioning							
Onshore Cable Corridor							
The onshore cable ducts would be left in place and trenches would not be re-excavated, and there would be no effects during the decommissioning phase.							
Onshore Substation							
A summary of effects during the decommissioning phase is presented in **Appendix 26.1 LVIA Annexes**. The significance of effects is assessed to be the same as assessed for the operation phase.							

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