



**NORTH FALLS**

*Offshore Wind Farm*

# **PRELIMINARY ENVIRONMENTAL INFORMATION REPORT**

## **Chapter 30 Landscape and Visual Impact Assessment**

*Document Reference No: 004447041-04*

*Date: May 2023*

*Revision: 04*



**NORTH FALLS**

*Offshore Wind Farm*

# PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

*May 2023*

<b>Project</b>	North Falls Offshore Wind Farm
<b>Sub-Project or Package</b>	Environmental Impact Assessment
<b>Document Title</b>	Preliminary Environmental Information Report Chapter 30 Landscape and Visual Impact Assessment
<b>Document Reference</b>	004447041-04
<b>Revision</b>	04 (Draft B)
<b>Supplier Reference No</b>	PB9244-RHD-PE-ON-RP-ON-0072

This document and any information therein are confidential property of North Falls Offshore Wind Farm Limited and without infringement neither the whole nor any extract may be disclosed, loaned, copied or used for manufacturing, provision of services or other purposes whatsoever without prior written consent of North Falls Offshore Wind Farm Limited, and no liability is accepted for loss or damage from any cause whatsoever from the use of the document. North Falls Offshore Wind Farm Limited retains the right to alter the document at any time unless a written statement to the contrary has been appended.

<b>Revision</b>	<b>Date</b>	<b>Status/Reason for Issue</b>	<b>Originator</b>	<b>Checked</b>	<b>Approved</b>
01 (Draft A)	02/11/22	1 <sup>st</sup> draft for NFOW review	NE/ PDM	AH	-
02 (Draft D)	06/02/23	2 <sup>nd</sup> draft for NFOW review	NE	AH	-
03 (Draft F)	14/03/23	Draft Final	NE/PDM	AH	JP / DH / AP
04 (Draft B)	15/05/23	Revised Final	NE	AH/GC	JP / DH / AP

**Contents**

- 30 Landscape and Visual Impact Assessment ..... 10
- 30.1 Introduction..... 10
- 30.2 Consultation ..... 10
- 30.3 Scope ..... 14
  - 30.3.1 Study area ..... 14
  - 30.3.2 Realistic worst case scenario ..... 15
  - 30.3.3 Summary of mitigation embedded in the design..... 19
- 30.4 Assessment methodology ..... 21
  - 30.4.1 Legislation, guidance and policy ..... 21
  - 30.4.2 Data sources ..... 24
  - 30.4.3 Impact assessment methodology ..... 24
  - 30.4.4 Cumulative effects assessment methodology..... 25
  - 30.4.5 Transboundary effects assessment methodology ..... 27
  - 30.4.6 Assumptions and limitations ..... 27
  - 30.4.7 Visualisation methodology ..... 27
- 30.5 Existing environment ..... 27
  - 30.5.1 Onshore project area ..... 27
  - 30.5.2 Landscape character ..... 28
  - 30.5.3 Landscape Designations ..... 30
  - 30.5.4 Visual amenity ..... 30
  - 30.5.5 Analysis of visibility of the onshore components of the Project..... 30
  - 30.5.6 Key visual receptors ..... 31
  - 30.5.7 Selection of viewpoints for assessment ..... 32
  - 30.5.8 Public Rights of Way (PRoW) ..... 33
  - 30.5.9 Future trends in baseline conditions ..... 33

30.6	Assessment of significance .....	33
30.6.1	Potential effects during construction .....	34
30.6.2	Potential effects during operation .....	34
30.6.3	Potential effects during decommissioning.....	34
30.6.4	Potential landscape effects during construction, operation and decommissioning .....	35
30.6.5	Potential visual effects during construction, operation and decommissioning .....	43
30.6.6	Residual effects .....	50
30.7	Cumulative effects .....	51
30.7.1	Identification of potential cumulative effects .....	51
30.7.2	Other plans, projects, and activities .....	52
30.7.3	Assessment of cumulative effects.....	58
30.8	Potential monitoring requirements .....	63
30.9	Interactions .....	63
30.10	Inter-relationships .....	64
30.11	Summary .....	64
30.12	References .....	73

## Tables

Table 30.1	Consultation responses .....	11
Table 30.2	Realistic worst-case scenarios .....	16
Table 30.3	Embedded mitigation measures .....	19
Table 30.4	NPS assessment requirements .....	21
Table 30.5	Landscape Character Areas .....	29
Table 30.6	LVIA assessment viewpoints .....	32

Table 30.7 Landscape effects during construction, operation and decommissioning in the onshore substation zone.....	35
Table 30.8 Effects on 7A Heathland Plateaux – Bromley Heaths LCA.....	36
Table 30.9 Effects on 2C – Holland Haven Drained Estuarine/ Coastal Marsh LCA	37
Table 30.10 Effects on 3D – Holland Coastal Slopes LCA .....	38
Table 30.11 Effects on 8B – Clacton and the Sokens Clay Plateau LCA .....	39
Table 30.12 Effects on 3A – Hamford Coastal Slopes LCA.....	40
Table 30.13 Effects on 8A – Tendring and Wix Clay Plateau LCA .....	41
Table 30.14 Effects on 6D – Holland Valley System (Clay Valleys) LCA .....	42
Table 30.15 Viewpoint 1 - Court Farm, Stutton Road .....	44
Table 30.16 Viewpoint 2 - Bridleway at Barn Lane .....	44
Table 30.17 Viewpoint 3 - Norman’s Farm .....	45
Table 30.18 Viewpoint 4 - Little Bromley Road to west .....	47
Table 30.19 Viewpoint 5 - PRow near Lilley’s Farm .....	48
Table 30.20 Viewpoint 6 - Grange Road to north .....	49
Table 30.21 Viewpoint 7 – ProW near Little Bromley Hall .....	50
Table 30.22 Summary of projects considered in the CEA in relation to Landscape and Visual (project screening) .....	53
Table 30.23 Operational Cumulative Landscape and Visual Effects .....	58
Table 30.24 LVIA interactions.....	63
Table 30.25 Inter-relationships between impacts .....	64
Table 30.26 Summary of potential likely significant effects on LVIA.....	66

## Figures (Volume II)

Figure 30.1.1a Landscape and Visual Impact Assessment Study Area (substation zone)

Figure 30.1.1b Landscape and Visual Impact Assessment Study Area (cable corridor(s))

Figure 30.1.2 Substation Zone of Theoretical Visibility (18m in height) and Viewpoint Locations

Figure 30.1.3 Landscape Character Types

Figure 30.1.4 Designated Landscapes

Figure 30.1.5 Onshore Cumulative Projects

Figure 30.2.1 Viewpoint 1 - Court Farm, Stutton Road

Figure 30.2.2 Viewpoint 2 - Bridleway at Barn Lane

Figure 30.2.3 Viewpoint 3 - Norman's Farm

Figure 30.2.4 Viewpoint 4 - Little Bromley (road to west)

Figure 30.2.5 Viewpoint 5 - PRoW near Lilley's Farm

Figure 30.2.6 Viewpoint 6 - Grange Road (and PRoW to north)

Figure 30.2.7 Viewpoint 7 - PRoW near Little Bromley Hall

## Glossary of Acronyms

AIS	Air-Insulated Switchgear
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
BEIS	Department for Business,
BNG	Biodiversity Net Gain
CEA	Cumulative Effects Assessment
DCO	Development Consent Order
DECC	Department of
DTM	Digital Terrain Model
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EN-1	Overarching National Policy Statement for Energy
EN-3	National Policy Statement for Renewable Energy Infrastructure
EN-5	National Policy Statement for Electricity Networks Infrastructure
EPP	Evidence Plan Process
ETG	Expert Topic Group
ES	Environmental Statement
EU	European Union
GIS	Gas Insulated Switchgear
GLVIA	Guidelines for Landscape and Visual Impact Assessment
HDD	Horizontal directional drilling
IEMA	Institute of Environmental Management and Assessment
IPC	Infrastructure Planning Commission
JNCC	Joint Nature Conservation Committee
LCA	Local Character Area
LCT/A	Landscape Character Type/ Area
LUC	Land Use Consultants Ltd
LVIA	Landscape and Visual Impact Assessment
NFOW	North Falls Offshore Wind Farm Limited
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
OLEMS	Outline Landscape and Ecological Management Strategy
OS	Ordnance Survey
PEIR	Preliminary Environmental Information Report
PRoW	Public Right of Way
RoW	Right of Way
SLVIA	Seascape, Landscape and Visual Impact Assessment

SNH	Scottish Natural Heritage
TCC	Trenchless Crossing Compound
TGN	Technical Guidance Note
UKHPI	United Kingdom Habitat of Principal Importance
ZTV	Zone of Theoretical Visibility



## Glossary of Terminology

Horizontal directional drill (HDD)	Trenchless technique to bring the offshore cables ashore at the landfall. The technique will also be used for installation of the onshore export cables at sensitive areas of the onshore cable route.
Landfall	The location where the offshore cables come ashore.
Link boxes	Underground chambers or above ground cabinets next to the onshore export cables housing low voltage electrical earthing links.
Onshore scoping area	The boundary in which all onshore infrastructure required for the Project will be located, as considered within the North Falls EIA Scoping Report.
Onshore export cables	The cables which take the electricity from landfall to the onshore substation. These comprise High Voltage Alternative Current (HVAC) cables, buried underground.
Onshore cable corridor(s)	Onshore corridor(s) within which the onshore export cables and associated infrastructure will be located. A final onshore cable route for which consent will be sought will be selected from within these corridor(s).
Onshore substation	A compound containing electrical equipment required to transform and stabilise electricity generated by the Project so that it can be connected to the National Grid.
Onshore substation zone	Area within which the onshore substation will be located.
The Applicant	North Falls Offshore Wind Farm Limited (NFOW).
The Project or 'North Falls'	North Falls Offshore Wind Farm, including all onshore and offshore infrastructure.
Trenchless crossing compound (TCC)	Areas within the cable corridor(s) which will house trenchless crossing (e.g. HDD) entry or exit points.

## 30 Landscape and Visual Impact Assessment

### 30.1 Introduction

1. This chapter of the Preliminary Environmental Information Report (PEIR) evaluates the effects of the onshore project components of the proposed North Falls Offshore Wind Farm on the landscape and visual resource. For the purposes of the Landscape and Visual Impact Assessment (LVIA) this chapter focuses on effects associated with the onshore substation, onshore export cables and the landfall (the onshore components of the Project).
2. This chapter has been written by chartered landscape architects at Land Use Consultants Ltd (LUC), with the preliminary assessment undertaken with specific reference to the relevant legislation and guidance, including the Guidelines for Landscape and Visual Impact Assessment, Third Edition 2013. Details of further relevant legislation and guidance and the methodology used for the Environmental Impact Assessment (EIA) and Cumulative Effects Assessment (CEA) are presented in Section 30.4 and within Appendix 29.1 Offshore Seascape, Landscape and Visual Impact Assessment (SLVIA) and Visualisation Methodology (Volume III).
3. The assessment should be read in conjunction with following PEIR chapters (Volume I):
  - Chapter 4 Site Selection and Assessment of Alternatives;
  - Chapter 5 Project Description;
  - Chapter 22 Land Use and Agriculture;
  - Chapter 23 Onshore Ecology;
  - Chapter 25 Onshore Archaeology and Cultural Heritage; and
  - Chapter 29 Offshore Seascape, Landscape and Visual Impact Assessment.

### 30.2 Consultation

4. Consultation with regard to LVIA has been undertaken in line with the general process described in Chapter 6 EIA Methodology (Volume I). The key elements to date have included scoping and the ongoing technical consultation via the Expert Topic Group (ETG). The feedback received has been considered in preparing the PEIR. Table 30.1 provides a summary of how the consultation responses received to date have influenced the approach that has been taken.
5. This chapter will be updated following the consultation on the PEIR in order to produce the final assessment, which will be presented in the ES that will be submitted with the Development Consent Order (DCO) application. Full details of the consultation process will also be presented in the Consultation Report as part of the DCO application.

**Table 30.1 Consultation responses**

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
Planning Inspectorate	Scoping Opinion (August 2021)	Potential impacts on designated landscapes <i>“The Scoping Report states that impacts on designated landscapes (Suffolk Coast and Heaths AONB and Heritage Coast) from onshore infrastructure are unlikely to be significant due to the distance from the AONB and their localised nature, and are proposed to be scoped out, although this will be confirmed once the substation site is known and through analysis of distance and potential visibility. At this stage, the Inspectorate does not have sufficient information about the location and design of the onshore infrastructure to conclude that it would not give rise to likely significant effects on designated landscapes (Suffolk Coast and Heaths AONB and Heritage Coast, and potentially Dedham Vale AONB, which is located on the north west boundary of the scoping area) and therefore this should not be scoped out of the ES.”</i>	Due to the refinement of the onshore scoping area to that presented for PEIR and the further detail developed around the siting of the onshore substation zone; the distance; and limited nature of actual visibility (verified through field work), effects on the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB)/ Heritage Coast and Dedham Vale AONB are considered unlikely to be significant.  Further detail is provided Section 30.5.3 of this assessment.
Planning Inspectorate	Scoping Opinion (August 2021)	Cumulative Impacts <i>“The Scoping Report states that cumulative impacts in relation to the onshore infrastructure, with other similar types of projects such as underground cables and substations, during construction, operation and decommissioning, are not considered likely to be significant as effects are typically more localised. On that basis, the Applicant proposes to be scope these matters out of the SLVIA unless consultation bodies are aware of any similar proposed projects within a range where cumulative interactions may potentially lead to significant impacts. The Inspectorate does not agree that these impacts can be scoped out of the assessment as insufficient evidence has been provided to support the assertion that no significant effects are likely to occur, for example the location and design of the onshore infrastructure has not yet been ascertained and no information is presented in the Scoping Report about onshore projects that might be included in the cumulative assessment.”</i>	Cumulative effects are considered in Section 30.7 of this assessment.

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
Planning Inspectorate	Scoping Opinion (August 2021)	Mitigation <i>"If mitigation is proposed for any likely significant effects this should be set out in detail in the ES and it should clearly set out how this mitigation will be secured."</i>	Principles for mitigation associated with the North Falls onshore substation are set out in the Design Vision (North Falls, 2023 and the Outline Landscape and Ecological Management Strategy (OLEMS) (which will be produced at the ES stage). Embedded mitigation is considered under year 1 effects. Landscape mitigation (once established) is considered in the residual effects assessment in Section 30.6 of this chapter. Detailed year 15 assessments are not provided at PEIR but will be included within the ES.
Essex County Council	Scoping Opinion (August 2021)	In principle, we are generally satisfied with the methodology proposed. However, we ask that the detailed methodology is submitted for review as soon as possible. The key terms and values that should be defined include: - Susceptibility and value - which contribute to sensitivity of the receptor; - Scale, duration and extent - which contribute to the magnitude of effect; and - Significance	The methodology for the LVIA broadly follows the methodology for the SLVIA. This was submitted in a detailed note to stakeholders in May 2021.
Essex County Council	Scoping Opinion (August 2021)	There is also an expectation that the assessment takes into consideration the Technical Guidance Note (TGN) 02-21 'Assessing the Value of Landscapes Outside National Designations' that has recently been published and builds on the details within GLVIA3 and the assessment of value (GLVIA3 Box 5.1). GLVIA3 recognises that landscape value is not always signified by designation: 'the fact that an area of landscape is not designated either nationally or locally does not mean that it does not have any value' (paragraph 5.26). This TGN provides further information on the subject matter and introduces	This will be referred to in the LVIA (and SLVIA), with reference to determining value for landscapes outside of designated landscapes.

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
		additional factors that should be taken into consideration when assessing value.	
Essex County Council	Scoping Opinion (August 2021)	The seascape and landscape character baseline should also be informed by the Landscape Character Assessment of the Essex Coast (2002), which is not referred to in Para 4.1.2 Approach to data collection.	The LVIA study area for the onshore components of the scheme are contained within the Tendring District Council Area. As such, the finer grain Tendring Landscape Character Assessment (LUC, 2001) has been used as the baseline for landscape character. This landscape character assessment also covers the full extents of the onshore LVIA study area.
Essex County Council	Scoping Opinion (August 2021)	The report mentions that there will be some habitat fragmentation and impact on local ecology (Section 3.5.3 pages 171-173) through the installation of cables and onshore substations. These impacts need to be minimised by mitigation measures and habitats or vegetation should be reinstated where appropriate. Any habitat enhancements, whether boundary hedgerow, field margin, grassland or wild flower meadow, grass strips, or woodlands all need to be connected to landscape wide GI network to prevent fragmentation and promote biodiversity migration. It is recommended that the Ecological Management Plan incorporates the mitigation measure for habitat/ GI removal, fragmentation and potential impact on protected designated sites (i.e., Holland Haven Marshes and Weeleyhall Wood SSSI's) to be identified in the EIA. There should also be the inclusion of a 'Landscaping and Screening Proposal' for the onshore substation that could result in a beneficial impact.	Landscape mitigation is considered in the Design Vision (North Falls 2023).
Essex County Council	Scoping Opinion (August 2021)	3.11 It is recommended that an integrated approach is taken to assessing impacts of the scheme. It is important that this approach is applied to the inter- relationships of built heritage, landscape and visual assessment, and noise and vibration	Interactions with other topic areas are considered in Section 30.9 of the LVIA.

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
		as identified in Table 3.32 when assessing the impacts of the scheme on these topics and their relationship with onshore built heritage.	
Essex County Council	Scoping Opinion (August 2021)	Viewpoint visualisation types In addition to representative viewpoints, it is expected that illustrative viewpoints will also be required as the purpose of LVIA is not only to provide technical analysis of the potential impacts but also to ensure the public and Interested Parties have a proper understanding of those likely effects.	The onshore viewpoints (to assess effects in relation to the onshore components of the Project) have been agreed through consultation with stakeholders, following scoping.
Natural England	Scoping Opinion (August 2021)	Cumulative impacts Natural England believes that it is currently too soon to scope out cumulative impacts when full details of the proposals are not yet known.	Cumulative landscape and visual impacts have been considered in Section 30.7.
LVIA Expert Topic Group	Meeting 04/05/2022	Post Scoping Viewpoint and Study Area Consultation  2km radius LVIA study area around the North Falls onshore substation zone confirmed.  Tendring District Council requested inclusion of an additional viewpoint, to north of the onshore substation zone, to consider effects in the vicinity of Grange Road.	Viewpoint from Grange Road is included, refer to Section 30.6.

## 30.3 Scope

### 30.3.1 Study area

6. The LVIA study area has been defined as 2km radius around the North Falls onshore substation zone and also includes the onshore project area around the onshore cable corridor(s) and landfall. The 2km study area around the onshore substation zone is based on consideration of the maximum height of the onshore substation and nature of the landscape (flatter landscape with hedgerows and areas of woodland which combine to limit/ minimise visibility in distances over 2km). These onshore components are contained within the Tendring District Area, in Essex. The location of the Study Area is shown on Figure 30.1.1a-b (Volume II).
7. The consideration of landscape and visual effects, including cumulative effects, on particular receptors is dealt with in the sections which follow, with specific reference to the distance within which the potential for significant effects is considered likely for both landscape and visual receptors.

8. To consider cumulative effects of the North Falls onshore substation in relation to other schemes in the wider area, Table 30.22 sets out which projects have been considered. Projects considered in the cumulative assessment are also shown on Figure 30.1.5 (Volume II), noting that insufficient information was available at the time of PEIR production to show the location of the proposed Five Estuaries substation area of search.
9. A Zone of Theoretical Visibility (ZTV) map was generated, illustrating areas from where an indicative location for the onshore substation (within the onshore substation zone) may be visible across the Study Area. The ZTV was based on a surface model which takes account of potential screening by vegetation or buildings. The ZTV is used as a tool for understanding where significant visual effects may occur. Receptors which are outside the ZTV will not have visibility of the proposed North Falls onshore substation and are not considered further in this LVIA. The ZTV is shown at A3 scale on Figure 30.1.2 (Volume II).
10. The ZTV is based on an indicative 15m high structure across the extents of the onshore substation indicative operational footprint. A 3m high lighting rod, which would be required on top of the gas-insulated switchgear (GIS) building, is also modelled. The ZTV is therefore run at a maximum height of 18m across the indicative location for the operational footprint of the substation, within the onshore substation zone. It should be noted that both GIS and air-insulated switchgear (AIS) substation layouts are being considered, both of which can be accommodated in the indicative substation footprint. Of these options the GIS building represents the least permeable (see through) structure, so for the purposes of the PEIR visualisations, this worst case scenario has been modelled.

### 30.3.2 Realistic worst case scenario

11. The final design of the Project will be confirmed through detailed engineering design studies that will be undertaken post-consent. In order to provide a precautionary but robust impact assessment at this stage of the development process, realistic worst case scenarios 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 (2018). The Rochdale Envelope for a project outlines the realistic worst case scenario for each individual impact, so that it can be safely assumed that all other scenarios within the design envelope will have less impact. Further details are provided in Chapter 6 EIA Methodology (Volume I).
12. The realistic worst case scenarios for the likely significant effects scoped into the EIA for the landscape and visual impact assessment are summarised in Table 30.2. These are based on project parameters described in Chapter 5 Project Description (Volume I), which provides further details regarding specific activities and their durations.

**Table 30.2 Realistic worst-case scenarios**

Potential impact	Parameter	Notes
<b>Construction</b>		
Impacts relating to the landfall	<u>Landfall Horizontal Directional Drill (HDD) (temporary works) physical parameters:</u> HDD temporary works area (4 circuits) = 100 x 200m Transition joint bay size = 4 x 15m No. of transition joint bays = 4 Maximum HDD depth = 20m Maximum number of HDD = 5, of which a maximum of two could work simultaneously	Duration includes compound establishment, HDD, transition bays, and reinstatement.
	<u>Duration:</u> 13 months (of which HDD = 6 months) HDD to include 24 hour / 7 days working where required	
Impacts relating to the onshore cable corridor(s)	<u>Cable corridor(s) construction physical parameters:</u> Working width = 60m open trench, 82m at shallow HDD crossings, 122m at deeper HDD crossings Corridor length = 24km Cable trench width (max.) = 3.75m No. of trenches = 4 Maximum cable burial depth = 2m Minimum cable burial depth at = 0.9m Haul road width = 6m Jointing bays = 80 - 192 (approximately every 500m) buried below ground Jointing bay construction footprint (per bay) = 13 x 5m Jointing bay depth = 2m Temporary construction compound footprint = 150 x 150m (general cable construction compounds) to 100 x 100m (small cable construction compounds). No. of compounds = 7	Overall duration includes establishing / reinstating trenchless crossing compound (TCCs) and haul roads, cable installation (trench excavation, duct installation, cable jointing), HDD (includes compound establishment, HDD, and reinstatement).
	<u>Trenchless crossings physical parameters:</u> Maximum width of buried cable = 110m	



Potential impact	Parameter	Notes
	<p>Maximum trenchless crossing depth = 20m  Trenchless crossing compound dimensions (major HDD compounds) = 80 x 120m  Trenchless crossing compound dimensions (minor HDD compounds) = 40 x 120m</p> <p><u>Durations:</u>  Overall duration = 18 – 24 months  Cable installation = 12 months  Major HDD (each location) = 8 months (of which HDD = 4 months)  Minor HDD crossings = 2 months  Major HDD crossings to include 24 hour / 7 days working where required.</p>	
Impacts relating to the onshore substation	<p><u>Onshore substation (temporary works) physical parameters:</u>  Total temporary working area footprint = 141,800m<sup>2</sup>  Permanent substation footprint = 267m x 300m  Construction compound footprint = 150 x 250m</p> <p><u>Durations:</u>  Construction duration = 30 months (6 months preparation works, 24 months construction)</p>	
<b>Operation</b>		
Impacts relating to the onshore cable route	<p><u>Cable corridor(s) operational physical parameters:</u>  No. of link boxes = up to 196  Link box footprint (per box) = 1.5m<sup>2</sup>  Cross-sectional area of cement-bound sand = 0.6m<sup>2</sup></p>	
Impacts relating to the onshore substation	<p><u>Onshore substation physical parameters:</u>  Permanent substation footprint = 267 x 300m</p> <p><u>Lighting requirements:</u>  TBC</p>	
<b>Decommissioning</b>		

Potential impact	Parameter	Notes
<p>No final decision has yet been made regarding the final decommissioning policy for the onshore project infrastructure including landfall, onshore cable corridor(s) 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.</p>		

### 30.3.3 Summary of mitigation embedded in the design

13. This section outlines the embedded mitigation relevant to the onshore landscape and visual assessment, which has been incorporated into the design of North Falls (see Table 30.3 below).
14. Additional landscape mitigation and biodiversity enhancement principles, which include new hedgerow and woodland planting, are described in the Design Vision (North Falls, 2023). This document also includes details on likely plant species and plant specifications. As this planting establishes and matures it will offer enhanced screening of the proposed North Falls onshore substation. Residual effects would be considered at year 15 of operation, once planting has established. Given that the detail of the location of the components in the onshore substation zone is to be confirmed, details of landscape mitigation have not yet been developed. Residual effects associated with maturing landscape mitigation are therefore considered at a broad level. Detailed assessments of year 15 effects are not provided in this PEIR but will be included in the ES.

**Table 30.3 Embedded mitigation measures**

Parameter	Mitigation measures embedded into North Falls design
Mitigation by site selection	<p>The onshore project area and onshore substation zone have been defined following an extensive site selection process, which has sought to take account of landscape and visual, other environmental, engineering, planning and land requirements to seek to identify the least sensitive project location. The site selection process is described in detail in Chapter 4 Site Selection and Assessment of Alternatives (Volume I).</p> <p>The site selection process has included consideration of the following landscape and visual criteria as part of the process:</p> <ul style="list-style-type: none"> <li>• Baseline landscape character and landscape susceptibility to change;</li> <li>• Landscape designations;</li> <li>• Principal visual receptors; and</li> <li>• Physical suitability of the site and potential for mitigation.</li> </ul>
Mitigation by construction method selection	<p>North Falls has committed to seeking to use trenchless techniques (e.g. HDD) where possible at all key sensitive linear features, including:</p> <ul style="list-style-type: none"> <li>• All 'important' hedgerows, and those hedgerows potentially suitable for supporting dormice and/or commuting / foraging bats;</li> <li>• Main rivers and watercourses potentially suitable for supporting water voles / otters;</li> <li>• Veteran trees;</li> <li>• Woodland UK Habitat of Principal Importance (UKHPI);</li> <li>• Ponds UKHPI.</li> </ul> <p>At this stage in the Project's design, trenchless techniques cannot be committed to at all locations, where the engineering feasibility of using such techniques needs further assessment before it can be confirmed. The list of techniques being considered at each crossing is described in Chapter 5 Project Description (Volume I), Appendix 5.1 Crossing Schedule (Volume III).</p>
Mitigation by design	<p>NFOW have committed to reduce the onshore cable corridor(s) working width to 37m at hedgerow crossings where open cut trenching is proposed, to minimise the amount of hedgerow removal required. This will be achieved by not including the topsoil/subsoil storage bunds in the cable corridor(s) working width at hedgerow crossings. Hedgerows will be replanted following construction but note that canopy</p>

Parameter	Mitigation measures embedded into North Falls design
	<p>tree species cannot be replanted within 5m of the buried cables, which will restrict canopy tree planting for a 37m swathe during hedgerow reinstatement.</p> <p>Hedgerow planting would be undertaken in the first winter season following construction.</p>
Habitat reinstatement	<p>All habitats subject to temporary disturbance during construction, will be reinstated in full following the completion of construction. The specific details of the reinstatement will be set out within the Environmental Management Plan (EMP) for each habitat. The following core principles for habitat reinstatement would be included within the EMP:</p> <p><i>Grassland habitats</i></p> <p>All topsoil stripped in grassland areas would be stored separately and reinstated following the completion of construction. Topsoil storage would be subject to a Soil Management Plan (secured through a DCO Requirement), which would also detail measures for soil storage and handling. Grassland reseeding would be undertaken using a local seed mix, to be agreed in advance with Natural England and Essex Wildlife Trust.</p> <p><i>Trees and hedgerows</i></p> <p>As advised by Essex County Council during the Evidence Plan Process (EPP), all tree and shrub planting undertaken by NFOW will be subject to an up to 10 year after care period.</p> <p>As advised by Natural England during the EPP, all hedgerows within the onshore project area not removed for construction to be allowed, where practicable, to thicken up during construction and operation to facilitate use as feeding and commuting corridors for wildlife.</p> <p>All reinstated hedgerows will be replanted using locally important and native species, as advised by Essex Wildlife Trust and following the Essex Hedgerow Local biodiversity Action Plan (LBAP).</p> <p><i>Arable field margins</i></p> <p>If landowner permission can be reached, this habitat will be reinstated in consultation with Essex Wildlife Trust and the local landowner to ensure the optimum benefits can be gained from each margin affected. Prior to construction, the arable field margins will be re-surveyed to assess their conservation value. Attempts will then be made to ensure habitat reinstatement takes the form of one of the following (Joint Nature Conservation Committee (JNCC), 2008):</p> <ul style="list-style-type: none"> <li>• Cultivated, low-input margins (land managed specifically to create habitat for annual arable plants);</li> <li>• Margins sown to provide seed for wild birds (margins or blocks sown with plants that are allowed to set seed and which remain in place over the winter);</li> <li>• Margins sown with wild flowers or agricultural legumes and managed to allow flowering to provide pollen and nectar resources for invertebrates;</li> <li>• Margins providing permanent, grass strips with mixtures of tussocky and fine-leaved grasses.</li> </ul>
Mitigation by design	<p>Mitigation of landscape and visual effects has been undertaken through design modifications and input to the design process. This includes consideration of the location of the various components within the substation zone, and consideration of the materials used, colour palette and boundary treatments (refer to Design Vision (North Falls, 2023).</p>
Biodiversity Net Gain	<p>NFOW are exploring opportunities to deliver a minimum of 10% BNG for the onshore elements of the Project, as articulated within the Environment Act 2021. The Project is engaging with Natural England and other ecological stakeholders and</p>

Parameter	Mitigation measures embedded into North Falls design
	members of the Onshore Ecology ETG to identify suitable projects and plans for delivering this BNG. Further details regarding the location of the Project's BNG will be set out within the Project's ES.

## 30.4 Assessment methodology

### 30.4.1 Legislation, guidance and policy

#### 30.4.1.1 National Policy Statements

15. The assessment of likely significant effects upon landscape and visual amenity has been made with specific reference to the relevant National Policy Statements (NPS). These are the principal decision-making documents for Nationally Significant Infrastructure Projects (NSIPs). Those relevant to the Project are:

- Overarching NPS for Energy (EN-1) (Department of Energy and Climate Change (DECC) 2011a);
- NPS for Renewable Energy Infrastructure (EN-3) (DECC 2011b);
- NPS for Electricity Networks Infrastructure (EN-5) (DECC 2011c);
- Draft Overarching NPS for Energy (EN-1) (Department for Business, Energy and Industrial Strategy (BEIS) 2021a);
- Draft NPS for Renewable Energy Infrastructure (EN-3) (BEIS 2021b); and
- Draft NPS for Electricity Networks Infrastructure (EN-5) (BEIS 2021c).

16. The UK Government announced a review of the existing NPSs within its December 2020 Energy White Paper (HM Government, 2020) and issued a draft version of Overarching NPS for Energy EN-1, NPS for Renewable Energy Infrastructure EN-3 and NPS for Electricity Networks Infrastructure EN-5 for consultation on 6th September 2021 (BEIS, 2021a; BEIS, 2021b; BEIS, 2021d). At the time of writing this PEIR chapter, final versions of the revised NPSs are not available.

17. The specific assessment requirements for landscape and visual, as detailed in the NPS, are summarised in Table 30.4 together with an indication of the section of the PEIR chapter where each is addressed.

**Table 30.4 NPS assessment requirements**

NPS Requirement	NPS Reference	PEIR Reference
<b>Overarching NPS for Energy (EN-1)</b>		
The landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development documents in England and local development plans in Wales.	Paragraph 5.9.5	Baseline landscape character and seascape assessments referenced in Section 30.5.  Relevant local development documents, referred to

NPS Requirement	NPS Reference	PEIR Reference
		in the assessment, (as listed in Paragraph 24).
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	Refer to Section 30.6 for construction and operational effects on the landscape and visual amenity.
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	Refer to Section 30.6 for construction and operational effects on the landscape and visual amenity.
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	Refer to Design Vision (North Falls, 2023).
The IPC [now the Planning Inspectorate/ 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	Refer to Design Vision (North Falls, 2023).
Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure 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.	Paragraph 5.9.22	Refer to Design Vision (North Falls, 2023).
<b>NPS for Renewable Energy Infrastructure (EN-3)</b>		
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	Refer to Design Vision (North Falls, 2023).
<b>NPS for Electricity Networks Infrastructure (EN-5)</b>		
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 effects of the onshore substation and cumulative interactions with similar schemes, in the LVIA study area, have been assessed in Section 30.7.

NPS Requirement	NPS Reference	PEIR Reference
<p>The impacts and costs of both overhead and underground options vary considerably between individual projects (both in absolute and relative terms). Therefore, each project should be assessed individually on the basis of its specific circumstances and taking account of the fact that Government has not laid down any general rule about when an overhead line should be considered unacceptable. The IPC should, however only refuse consent for overhead line proposals in favour of an underground or sub-sea line if it is satisfied that the benefits from the non-overhead line alternative will clearly outweigh any extra economic, social and environmental impacts and the technical difficulties are surmountable. In this context it should consider:</p> <ul style="list-style-type: none"> <li>The landscape in which the proposed line will be set, (in particular, the impact on residential areas, and those of natural beauty or historic importance such as National Parks, AONBs and the Broads).</li> </ul>	Paragraph 2.8.9	Potential effects on AONB are considered in Section 30.5.3.
<b>Draft Overarching NPS for Energy (Draft EN-1)</b>		
Applicants should consider how landscapes can be enhanced using landscape management plans, as this will help to enhance environmental assets where they contribute to landscape and townscape quality.	Paragraph 5.10.10	Refer to Design Vision (North Falls, 2023).
<p>The duty to have regard to the purposes of nationally designated areas also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. The aim should be to avoid compromising the purposes of designation and such projects should be designed sensitively given the various siting, operational, and other relevant constraints. This should include projects in England which may have impacts on National Scenic Areas in Scotland.</p> <p>The fact that a proposed project will be visible from within a designated area should not in itself be a reason for refusing consent.</p>	Paragraph 5.10.14/15	Potential effects on AONB are considered in Section 30.5.3.
<b>Draft NPS for Renewable Energy Infrastructure (EN-3)</b>		
A review of draft NPS EN-3 (2021b) did not identify requirements relating to LVIA (landward of MHWS) and are therefore not considered relevant to this chapter.		
<b>Draft NPS for Electricity Networks Infrastructure (EN-5)</b>		
A review of draft NPS EN-5 (2021c) did not identify requirements relating to LVIA (landward of MHWS) and are therefore not considered relevant to this chapter.		

### 30.4.1.2 *Other legislation, policy and guidance*

18. The following policy and guidance documents have been considered in carrying out this assessment.

- Landscape Institute and IEMA (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3);
- Natural England (2014). An Approach to Landscape Character Assessment;

- Landscape Institute (2021). Assessing the Value of Landscapes outside National Designations, The Technical Guidance Note (TGN) 02-21;
- Scottish Natural Heritage (SNH, now NatureScot) (2021). Assessing the cumulative impact of onshore wind energy developments; and
- Landscape Institute (2019). Visual representation of Development Proposals, Technical Guidance Note 06/19.

### 30.4.2 Data sources

#### 30.4.2.1 *Site specific*

19. To provide site specific and up to date information on which to base the LVIA, a site characterisation survey and visits to assessment viewpoints was carried out between November 2021 and July 2022.

#### 30.4.2.2 *Other available sources*

20. The following information sources have been referred to in carrying out this assessment:
  - Natural England (2014). National Character Area Profiles;
  - Suffolk Coast and Heaths AONB. Suffolk Coast and Heaths Area of Outstanding Natural Beauty Management Plan 2018 -2023;
  - Dedham Vale AONB. Dedham Vale Area of Outstanding Natural Beauty Management Plan 2021-2026;
  - LUC (2001). Tendring District Landscape Character Assessment;
  - Tendring District Local Plan 2013-2033 and Beyond;
  - Ordnance Survey (OS) maps at a range of scales;
  - OS digital terrain model (DTM) datasets;
  - Field survey (January 2022 to May 2022); and
  - Aerial and street-level photography available online.

### 30.4.3 Impact assessment methodology

21. The significance of the potential effects of the onshore components of the Project has been determined by professional consideration of the sensitivity of the receptor and the magnitude of the potential effect. The methodology is in accordance with the guidance set out in Guidelines for Landscape and Visual Impact Assessment (3<sup>rd</sup> Edition), and as such slightly differs to the approach taken by other topic specialists as presented in the PEIR.

#### 30.4.3.1 *Sensitivity of receptors*

22. The sensitivity of the baseline conditions, including the importance of environmental features in or near to the onshore project areas or the sensitivity of potentially affected receptors, has been assessed in line with best practice guidance, legislation, statutory designations and professional judgement.
23. Judgements regarding the sensitivity of landscape or visual receptors require consideration of both the susceptibility of the receptor to the type of



development proposed and the value attached to the landscape or visual resource. Judgements have been recorded as high, medium or low. Detailed information about the approach to assessment of sensitivity is provided in Appendix 29.1 (Volume III).

#### 30.4.3.2 *Magnitude of impact*

24. The magnitude of potential impacts (scale of change) has been identified through consideration of the degree of change to baseline conditions predicted as a result of the onshore components of the Project and the duration and reversibility of an impact. This professional judgement has been made in line with best practice guidance and legislation.
25. Judgements regarding the magnitude of landscape or visual change have been recorded as high, medium, low or negligible. Detailed information about the approach to assessment of magnitude is provided in Appendix 29.1 (Volume III).

#### 30.4.3.3 *Significance of effect*

26. The sensitivity of the landscape or visual receptor and the magnitude of the predicted impacts has been used as a guide, informed by professional judgement, to predict the significance of the likely effects.
27. Appendix 29.1 (Volume III) provides full details of the criteria considered in judging the identified aspects of sensitivity (susceptibility and value) and magnitude of change (scale, geographical extent, duration and reversibility), and the grades used to describe each.
28. Although a numerical or formal weighting system has not been applied, consideration of the relative importance of each aspect has been made to feed into the overall decision. Levels of effect have been identified as negligible, minor, moderate or major where moderate and major effects are considered significant in EIA terms.
29. This determination requires the application of professional judgement and experience to take on board the many different variables which need to be considered and which are given different weight according to site-specific and location-specific considerations in every instance. Judgements have been made on a case by case basis, guided by the principles set out in Figure 29.1.1 in Appendix 29.1 (Volume III).
30. In terms of the direction of effects (positive or adverse) there is a wide spectrum of opinion with regard to wind energy and associated development. Taking a precautionary stance, effects are assumed to be adverse, unless stated otherwise.

#### 30.4.4 Cumulative effects assessment methodology

31. The cumulative LVIA considers the potential effects of the addition of a proposed development, against a landscape baseline that includes other similar developments that may or may not be present in the landscape in the future, i.e. schemes that are consented but not yet built, and/or undetermined planning applications. The developments included in each scenario are assumed to be present in the landscape for the purposes of the cumulative LVIA.

32. The focus of the cumulative LVIA is on the 'additional' cumulative change. The reported cumulative effect is the additional effect that would occur in a future baseline scenario, over and above the 'stand-alone' effect of the Project. In most cases, the stand-alone effects reported in the primary assessment would not cease. The cumulative LVIA seeks to set out whether the effect would be different in the future baseline and identify any 'additional' and potentially significant cumulative effects.
33. The cumulative LVIA also considers the 'total' cumulative effects. GLVIA3 refers to this as 'combined' cumulative effects, and states that this should include "all past, present and future proposals together with the new project". The assessment of total cumulative effects therefore considers the effect of all built and unbuilt developments, including the Project, on the current baseline.
34. The cumulative LVIA focuses on operational interactions between the above ground onshore components and other similar projects (including consented and proposed developments within 2km of the onshore substation zone). Refer to Section 30.7 for further detail on projects which have been included for cumulative assessment.
35. Cumulative landscape and visual interactions during the construction phase will be transient in nature and will depend on the phasing of other potential construction projects, for those projects considered in the cumulative assessment (refer to Table 30.22). Should all projects considered in the cumulative assessment be constructed at the same time it is likely that cumulative construction phase landscape and visual effects (with partially constructed electricity infrastructure) will be no greater than cumulative operational stage landscape and visual effects (with fully constructed electricity infrastructure). As the onshore export cable will be underground, operational cumulative interactions with this component are not anticipated. Cumulative interactions with offshore projects, such as offshore wind farms, are unlikely to be significant. This is due to the different landscape context/ screening provided by intervening vegetation which limits potential for cumulative intervisibility between the onshore above ground components and offshore projects/ and limited nature of coastal views across the onshore project area.
36. The methodology for the cumulative LVIA follows that of the LVIA, which considers the introduction of a proposed development to a baseline which includes existing (operational and under construction) developments. The scale of cumulative change considers aspects such as:
  - The pattern and arrangement of developments in the landscape or view, e.g. developments seen in one direction or part of the view (combined views), or seen in different directions (successive views in which the viewer must turn) or developments seen sequentially along a route;
  - The relationship between the scale of the developments; and
  - The distances between developments, how they relate to each other and their distances from the viewer.

#### 30.4.4.1 *Significance of Cumulative Effects*

37. As for a LVIA, judging the significance of cumulative landscape and visual effects requires consideration of the sensitivity and the magnitude of impact

(magnitude of change) on those receptors. Appendix 29.1 (Volume III) provides further detail.

#### 30.4.5 Transboundary effects assessment methodology

38. The transboundary assessment considers the potential for transboundary effects to occur as a result of North Falls; either those that might arise within the Exclusive Economic Zone (EEZ) of European Economic Area (EEA) states or arising on the interests of EEA states. Chapter 6 EIA Methodology (Volume I) provides further details of the general framework and approach to the assessment of transboundary effects.
39. For LVIA, no potential for transboundary effects has been identified and therefore do not need to be considered for this chapter.

#### 30.4.6 Assumptions and limitations

40. Detailed information about the proposals (including certain developments considered in the cumulative assessment) has not yet been fully developed. The assessment is therefore based on a worst-case scenario as set out in the paragraphs above. While this limits the detail that can be presented, the Project envelope approach is considered to be well understood.
41. No substantial information gaps have been identified during the gathering of baseline information or undertaking of the assessment, and it is considered that there is sufficient information to enable the identification and preliminary assessment of likely significant effects on landscape, views and visual amenity.

#### 30.4.7 Visualisation methodology

42. The methodology for production of the visualisations was based on current good practice guidance as set out by the Landscape Institute. Detailed information about the approach to viewpoint photography, ZTV and visualisation production is provided in Appendix 29.1 (Volume III).
43. The onshore visuals illustrate the potential maximum height (15m) of the largest proposed building, across the indicative onshore substation operational footprint. The indicative onshore substation operational footprint covers a larger area (300m by 267m) than the footprint of the proposed largest building (50m by 15m). The visuals therefore present the maximum envelope for the various components in the indicative onshore substation operational footprint.

### 30.5 Existing environment

#### 30.5.1 Onshore project area

44. The onshore substation zone is located to the north-east of the existing substation, to north and south of Ardleigh Road. The zone is located approximately 2km to the south-west of the settlement of Lawford, in Tendring.
45. It is approximately 35m Above Ordnance Datum (AOD) and the landform across the site is generally flat. The landcover is characterised by arable farmland with a large-scale field pattern. Field boundaries across the zone are generally open in character. There are some hedgerow boundaries with occasional hedgerow

trees and a higher level of tree cover along the boundary with Barn Lane and Grange Road, to the north and west and around the existing substation on Ardleigh Road, to the south-west of the zone. It is open to farmland to the east and south. A steel-tower overhead electricity line crosses the north-western edge of the site.

46. The onshore substation zone is not located in any nationally (National Parks, Areas of Outstanding Natural Beauty) or locally designated landscapes (Areas of Special Character, as identified in the Tendring District Local Plan 2013-2033 and Beyond).
47. The landfall is located on the coastline between Frinton-on-Sea and Clacton-on-Sea (refer to Figure 30.1.1b, Volume II). The landfall is located in the Holland Haven Drained Estuarine/ Coastal Marsh Landscape Character Area (LCA). The key characteristics of this landscape are described in Table 30.9.
48. The onshore export cables will link the landfall to the onshore substation (to the north of Ardleigh Road) by means of an underground cable. The boundary of the onshore cable corridor(s) is shown on Figure 30.1.1b (Volume II). From the landfall location, the cable corridor(s) travels north-west, through Tendring. It passes to the north of the small settlement of Thorpe le Soken, where three cable corridor options have been identified. The cable corridor(s) then continues in a north-west direction, where it crosses the A120 and continues west on the approach to the onshore substation zone. There will also be a short section of cable, which links the proposed substation to the proposed East Anglia GREEN substation (refer to Figure 30.1.5 (Volume II) for location) The eventual cable route will be narrower than the cable corridor(s) indicated on Figure 30.1.1b (Volume II).

### 30.5.2 Landscape character

49. This section provides a description of landscape character (including constituent landscape elements), drawing on published studies, supplemented with project specific research and field work where relevant.
50. The onshore substation zone is located in the 7A Heathland Plateaux – Bromley Heaths Landscape Character Area (LCA), as identified in the Tendring District Landscape Character Assessment (2001). The key characteristics of this landscape, are as follows:
  - “Exposed and windswept plateau corresponding to highest part of the district;
  - Deep, coarse, loamy and often stoneless brown soils which support a high grade agricultural land;
  - Large scale productive arable fields divided by low, gappy hedgerows where hedgerow oaks stand out as silhouettes against the skyline;
  - Apple orchards around Ardleigh, Elmstead and Frating are sheltered by belts of poplar or fast growing *Leylandii*;
  - Former heaths largely converted to smallholdings or regenerating woodland. Small areas of remnant heath survive;

- Neglected oak/ sweet chestnut coppice with ground flora typical of acidic woodland soils;
  - Low density, rural settlement pattern of scattered farms and halls, hamlets villages and small market towns;
  - Network of narrow lanes connect scattered farms and villages and roadside verges often contain gorse and bracken; and
  - Dramatic, dominating skyline.”
51. Landscape Character Areas (LCA) across the study area are mapped on Figure 30.1.3 (Volume II).
52. Consideration of the key characteristics; influence of existing development; and potential relationship with the onshore components of the Project is used as a means of identifying which LCA require further assessment, and which can be scoped out because they are unlikely to experience significant effects arising from the onshore components of the Project. Details are provided in Table 30.5 below, with LCA to be included in shown in bold.

**Table 30.5 Landscape Character Areas**

Landscape Character Area	Considerations to determine if LCA is carried forward for detailed assessment
<b>7A Heathland Plateaux – Bromley Heaths Landscape Character Area</b>	<b>The North Falls onshore substation zone and a section of the onshore cable corridor(s) is within this LCA. Consider further.</b>
<b>2C – Holland Haven Drained Estuarine/ Coastal Marsh</b>	<b>A section of the onshore cable corridor(s) is within this LCA. Consider further.</b>
<b>3D – Holland Coastal Slopes</b>	<b>A section of the onshore cable corridor(s) and the landfall is within this LCA. Consider further.</b>
<b>8B – Clacton and the Sokens Clay Plateau</b>	<b>A section of the onshore cable corridor(s) is within this LCA. Consider further.</b>
<b>3A – Hamford Coastal Slopes</b>	<b>A section of the onshore cable corridor(s) is within this LCA. Consider further.</b>
<b>8A – Tendring and Wix Clay Plateau</b>	<b>A section of the onshore cable corridor(s) is within this LCA. Consider further.</b>
<b>6D – Holland Valley System (Clay Valleys)</b>	<b>A section of the onshore cable corridor(s) is within this LCA. Consider further.</b>
6A – Stour Valley System	Small area of the LCA in northern extents of the onshore substation 2km radius study area. Given intervening vegetation and nature of the LCA terrain (which falls away from the onshore substation zone) effects on landscape character unlikely to be significant. Not considered further.
6C – Alresford Valley System	Small area of the LCA in southern extents of the onshore substation 2km radius study area. Given intervening vegetation and nature of the LCA terrain (which falls away from the onshore substation zone) effects on landscape character unlikely to be significant. Not considered further.

### 30.5.3 Landscape Designations

53. In terms of landscape designations, the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) is located outside the LVIA study area. As such, any effects would be indirect. The potential for more open views south, towards the onshore substation zone, from the north of the River Stour is recognised (an assessment viewpoint has been included from here at Viewpoint 1). This confirms that visibility from the AONB, towards the onshore substation zone, is limited. Due to distance and the limited nature of actual visibility, landscape effects on the special qualities of the AONB are unlikely to be significant. As such, landscape effects on this AONB have not been considered further in this assessment. Effects on views from within this AONB are considered separately, see Table 30.12.
54. The Dedham Vale AONB is located to the north-west of the LVIA study area, just within 2km of the onshore substation zone. The potential for notable views from this designated landscape is considered unlikely, given the:
- More inland location and narrower nature of the river corridor (where longer distance views from the southern (and closer) edge of the AONB are available, these tend to be focused north, over Dedham Vale); and
  - Intervening vegetation and gently undulating/ flatter terrain, between the AONB and the onshore substation zone, which combine to limit actual visibility towards the onshore substation zone (outside the AONB to the south).
55. The ZTV (refer to Figure 30.1.2, Volume II) identifies a small area of theoretical visibility from the southern edge of the AONB (within 2km) along Harwich Road. Intervening woodland cover and built form, including large poly tunnels to the east of Foxash Estate, will largely screen views towards the proposed substation from here. Furthermore, a large steel tower overhead electricity line crosses the foreground of the view when looking south, from Harwich Road. As such, landscape effects on this AONB are unlikely to be significant and have not been considered further in this assessment. As a result, there is no viewpoint from this AONB included for assessment.
56. There are no relevant local landscape designations in Tendring which required detailed assessment.

### 30.5.4 Visual amenity

57. This section identifies the extent of potential visibility of the onshore components of the Project and identifies visual receptors that are assessed as part of the LVIA. This section also introduces the viewpoints that are used as representative points from which to assess effects on visual receptors (people) and particular views, including reasons for their selection.

### 30.5.5 Analysis of visibility of the onshore components of the Project

58. Figure 30.1.2 (Volume II) shows the theoretical visibility of the onshore substation, at 18m in height (based on worst case 15m GIS building with 3m high lighting rod). The ZTV is based on an indicative 15m high structure across

the extents of the onshore substation indicative operational footprint. A 3m high lighting rod, which would be required on top of the GIS building, is also modelled. The ZTV is therefore run at a maximum height of 18m across the indicative operational footprint of the substation. It should be noted that both GIS and AIS substation layouts are being considered, both of which can be accommodated in the indicative substation footprint. Of these options the GIS building represents the least permeable (see through) structure, so for the purposes of the PEIR visualisations, this worst case scenario has been modelled.

59. The ZTV indicates a more widespread pattern of theoretical visibility within a 1km radius of the indicative onshore substation, with a more intermittent pattern beyond 1km (most notably to the west and south of the onshore substation zone).
60. The landscape around the substation zone is generally fairly flat. As such, areas of woodland and hedgerows will influence the level of actual visibility. This will be subject to seasonal changes in leaf cover.

### 30.5.6 Key visual receptors

61. There are a number of properties and farmsteads across the LVIA study area. Norman's Farm, to the south-east, is the closest inhabited residential property at approximately 500m distance, and likely to experience more open secondary views to site.
62. In terms of small settlements, views from properties on the western edge of Little Bromley, to the east, are secondary and typically filtered / screened by intervening vegetation. Views from the wider settlements of Foxash Estate and Burnt Heath will largely be screened by intervening vegetation.
63. There are no footpaths across the indicative substation operational footprint. Boundaries to the south of the indicative substation operational footprint along Ardleigh Road and associated views from the road (and footpath network south of the road) are open. There is a hedge-lined footpath along Barn Lane (and associated bridleway) to the north-east.
64. In terms of wider views, the onshore substation zone is generally flat. Hedgerows and areas of woodland will help to filter and screen middle to longer distance views.
65. Potential visual receptors (including visual receptors along the cable corridor(s)) include:
  - Residents, including views from farms, properties, small hamlets and settlements;
  - Those engaged in recreational activities (e.g. walkers using public rights of way (PRoW), horse riders, cyclists and users of the coastal edge near the proposed landfall);
  - Road users; and
  - People at their place of work, including agricultural workers.

### 30.5.7 Selection of viewpoints for assessment

66. This section sets out the viewpoints that are used to represent and assess the visual effects of the onshore components of the Project. The viewpoint list is a representative selection of locations agreed with the statutory consultees; it is not an exhaustive list of locations from which the onshore components of the Project will be visible.
67. A total of seven viewpoints were selected across the LVIA study area through desk study, site work and discussions with statutory consultees. These viewpoints are all publicly accessible as advocated by GLVIA3 and include:
- Locations selected to represent the experience of different types of receptor;
  - Locations at different distances to provide a representative range of viewing angles and distances (i.e. shorter to longer distance views);
  - Locations which illustrate key cumulative interactions with other similar types of development;
  - Locations which represent a range of viewing experiences (i.e. static views and points along sequential routes);
  - Specific viewpoints selected because they represent promoted views or viewpoints within the landscape; and
  - Illustrative viewpoints chosen specifically to demonstrate a particular visual effect or specific issue (which could include restricted visibility in particular locations or effects from coastal settlements).
68. The viewpoints are listed in Table 30.6 and shown alongside the ZTV on Figure 30.1.2 (Volume II).

**Table 30.6 LVIA assessment viewpoints**

Viewpoint	Location	Grid Reference	Reason for selection
1	Court Farm, Stutton Road	612400 234489	To represent longer distance views from Suffolk Coast and Heaths AONB, north of the River Stour. This viewpoint has been included as longer distance and more open views from higher ground, looking south over the River Stour estuary, are theoretically available from the Suffolk Coast and Heaths AONB.
2	Bridleway at Barn Lane	609119 229055	To represent views from the footpath network (and residents on western edge of Little Bromley), to the north-east of the substation siting zone.
3	Norman's Farm	608405 228479	To represent views from closest proximity residential receptors.
4	Little Bromley Road to west	607484 228723	To represent views from local road network, on western approach to the substation siting zone.
5	PRoW near Lilley's Farm	607763 228002	To represent views from footpath network, near Lilley's Farm, to south of substation siting zone.
6	Grange Road to north	609147 230544	To represent middle distance views to north of site. Requested by Tendring District Council.
7	PRoW near Little Bromley Hall	609063 227889	To represent views from footpath network, near Little Bromley Hall, to the south-east of the substation siting zone.



### 30.5.8 Public Rights of Way (PRoW)

69. Visibility from a route is not uniform along its entire length. This is because views of the surrounding landscape change as one moves along the route depending on the surrounding topography, buildings, structures, tree cover and vegetation along the route.
70. Based on an analysis of the ZTV (refer to Figure 30.1.2, Volume II) and actual visibility through fieldwork, sequential effects from the following PRoW have been considered in this assessment:
  - PRoW 170\_57 (through consideration of representative Viewpoint 2 - Bridleway at Barn Lane);
  - PRoW 172\_15 (through consideration of representative Viewpoint 5 - PRoW near Lilley's Farm); and
  - PRoW 172\_14 and PROW 172\_16 (through consideration of representative Viewpoint 7 - PRoW near Little Bromley Hall).

### 30.5.9 Future trends in baseline conditions

71. In the event that the Project is not developed, a description of the anticipated changes in future baseline conditions for onshore landscape has been carried out and is described within this section.
72. In the absence of the Project, it is likely that the onshore substation zone and onshore cable corridor(s) would continue under the same land uses, large parts of which are associated with agricultural use. The potential for further onshore electricity infrastructure in areas of farmland immediately around the onshore substation zone is recognised, and discussed further below in Section 30.7.
73. The wider surrounding landscape and visual amenity is likely to be further influenced by a number of 'forces for change'.
74. Forces for change are those factors affecting the evolution of the landscape and which may, consequently, affect the perception of the study area in the near or distant future. This is likely to include new transport, infrastructure, commercial and residential development, which will likely reduce the areas of farmland across the study area. The landscape baseline conditions will also continue to change following natural trends and increasing influence from climate change.

## 30.6 Assessment of significance

75. The following sections describe the impacts upon those landscape and visual receptors described in Section 30.5 that have the potential to arise because of the construction, operation, and decommissioning phases of the Project. The assessment follows the methodology set out in Section 30.4. The assessments are based on the worst-case scenarios set out in Section 30.3.2 and include the incorporation of embedded mitigation and project commitments set out in Section 30.3.3.

### 30.6.1 Potential effects during construction

76. During the construction phase, there will be potential short-term landscape and visual effects arising from the presence of partially constructed infrastructure and undertaking of construction activities/ movement of construction vehicles and plant in the onshore project area. Effects occurring during the construction phase are considered to be short-term, reversible and adverse, unless otherwise stated.
77. The changes arising from the construction of the onshore components of the Project will be primarily associated with construction of:
- Onshore export cables, jointing bays and link boxes;
  - Temporary cable construction compounds and haul roads;
  - Onshore substation; and
  - Temporary onshore substation construction compound.

### 30.6.2 Potential effects during operation

78. The operational lifespan of the Project is estimated to be 30 years for the purposes of the EIA. The main effects of the onshore components of the Project on landscape and visual amenity once operational will arise from the presence of the onshore substation and other above ground structures, as described in Chapter 5 Project Description (Volume I). Effects occurring during the operational phase are considered to be long-term and permanent unless otherwise stated.
79. At this stage the final details of the various components in the onshore substation zone and detail of the landscape mitigation proposals are not known. Once this is confirmed, it is likely maturing landscape mitigation (including areas of native woodland planting and hedgerows) will assist in integrating the substation operational footprint and infrastructure contained therein into the wider landscape fabric of farmland, hedgerows and areas of woodland helping to reduce the level of effect from certain landscape and visual receptors.
80. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects. This will be supported by visualisations which show maturing landscape mitigation at year 15.

### 30.6.3 Potential effects during decommissioning

81. No decision has been made regarding the final decommissioning policy for the onshore substation, as it is recognised that industry best practice, rules and legislation change over time. However, the substation equipment will likely be removed and reused or recycled.
82. It is expected the onshore export cables will be removed from ducts and recycled, with the transition pits and ducts left in situ.
83. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan would be provided.


84. It is anticipated that the decommissioning impacts will be similar in nature to those identified during construction (see construction phase assessment for various landscape and visual receptors in assessment tables which follow).

### 30.6.4 Potential landscape effects during construction, operation and decommissioning

#### 30.6.4.1 Onshore substation zone

85. Landscape effects during construction, operation and decommissioning of the onshore components of the Project are set out in the Table 30.7 below.

**Table 30.7 Landscape effects during construction, operation and decommissioning in the onshore substation zone**

Receptor	Onshore substation zone
Baseline Description	<p>Description of the onshore substation zone is provided at Section 30.5.1 onwards.</p> <p>The photograph below (looking north over the site from Ardleigh Road between VP03 and VP04 in Figure 30.1.2) illustrates the landscape character of the onshore substation zone, typified by large open and flatter arable fields with a mix of open and hedgerow boundaries, occasional trees and smaller areas of woodland. The settlement pattern around the onshore substation zone is low density and the road pattern is characterised by minor rural roads.</p> 
Sensitivity	<p>Whilst the onshore substation zone is located in a rural landscape, it is flat and open in nature, with areas of woodland and hedgerows in the surrounding landscape which help to screen and break up views. The settlement pattern is relatively low density. Electricity infrastructure, including an existing substation and overhead lines, influences the surrounding landscape character. As such, the landscape susceptibility, to the type of development proposed, is judged to be medium-low.</p> <p>The onshore substation zone is not designated, indicating a lower value.</p> <p>Overall, the landscape sensitivity to the type of development proposed, is judged to be medium-low.</p>
Construction/ Decommissioning Effects	<p>The landscape of the onshore substation zone will experience direct landscape changes. These changes will include preparatory groundworks to facilitate construction access; earthworks and drainage works to form the substation platform; the creation of a temporary construction compound; and associated vehicle movements/ construction activity. Direct landscape changes to the onshore substation zone will include the removal/ disturbance to areas of arable farmland and field boundaries. Disturbance to surrounding hedgerows and woodland will be minimal. Further detail on vegetation removal is provided in Chapter 23 Onshore Ecology (Volume I).</p> <p>Construction of the main components of the substation and associated activities will result in a large scale physical change experienced at a localised level. The duration of construction effects will be short-term, and most disturbance necessary to facilitate</p>

Receptor	Onshore substation zone
	<p>construction will be reversible, with areas of disturbed ground reinstated following completion of all works in accordance with best practice guidance. However, the main infrastructure components introduced during this phase will remain into the operational phase.</p> <p>The magnitude of landscape change for the onshore substation zone during construction is judged to be high. Combined with the overall medium-low sensitivity of the onshore substation zone, the landscape effect during construction is judged to be moderate adverse, which is significant in EIA terms. Effects would be short term.</p>
Operational Effects	<p>The introduction of the substation building and associated electrical infrastructure will result in direct, large scale landscape change experienced at a localised level. The onshore substation zone will change in character from open arable fields to a site housing large scale electricity infrastructure.</p> <p>The magnitude of landscape change during operation is judged to be high. Combined with the overall medium-low sensitivity of the onshore substation zone, the landscape effect during operation is judged to be moderate adverse, which is significant in EIA terms. Effects would be long-term.</p>

### 30.6.4.2 Effects on landscape character

86. This section describes the effects resulting from the onshore components of the Project on Landscape Character Areas (LCA) which have been identified as requiring detailed consideration in Table 30.5. Further information on key characteristics of each LCA is provided for each receptor below.

**Table 30.8 Effects on 7A Heathland Plateaux – Bromley Heaths LCA**

Receptor	7A Heathland Plateaux – Bromley Heaths LCA
Baseline Description	<p>The onshore substation zone and a section of the onshore cable corridor(s) is located in this LCA (refer to Figure 30.1.3, Volume II).</p> <p>The key characteristics, as defined in the Tendring District Landscape Character Assessment (2001), are as follows:</p> <ul style="list-style-type: none"> <li>• <i>“Exposed and windswept plateau corresponding to highest part of the district.</i></li> <li>• <i>Deep, coarse, loamy and often stoneless brown soils which support a high grade agricultural land.</i></li> <li>• <i>Large scale productive arable fields divided by low, gappy hedgerows where hedgerow oaks stand out as silhouettes against the skyline.</i></li> <li>• <i>Apple orchards around Ardleigh, Elmstead and Frating are sheltered by belts of poplar or fast growing Leylandii.</i></li> <li>• <i>Former heaths largely converted to smallholdings or regenerating woodland. Small areas of remnant heath survive.</i></li> <li>• <i>Neglected oak/ sweet chestnut coppice with ground flora typical of acidic woodland soils.</i></li> <li>• <i>Low density, rural settlement pattern of scattered farms and halls, hamlets villages and small market towns.</i></li> <li>• <i>Network of narrow lanes connect scattered farms and villages and roadside verges often contain gorse and bracken.</i></li> <li>• <i>Dramatic, dominating skyline.”</i></li> </ul>
Sensitivity	<p>Due to the larger scale nature, flatter terrain, areas of woodland and hedgerows and low density settlement pattern, the characteristics of this landscape are judged to be of medium-low sensitivity, to the type of development proposed.</p> <p>The LCA is not in any designated landscapes, indicating a lower value.</p> <p>Overall, the landscape sensitivity of this LCA to the type of development proposed, is judged to be medium-low.</p>

Receptor	7A Heathland Plateaux – Bromley Heaths LCA
Construction/ Decommissioning Effects	<p>Beyond the direct landscape changes arising from the construction of the main components of the onshore substation (detailed in Table 30.7 above) and onshore cable corridor(s), no further direct landscape effects on this LCA will occur. The very localised loss of arable farmland and temporary disturbance to farmland/ hedgerows and field boundaries associated with construction of the onshore export cable, will not extend beyond the cable corridor(s) to the wider extents of the LCA. As far as possible, areas of woodland will be avoided. Further detail on vegetation removal is provided in Chapter 23 Onshore Ecology (Volume I).</p> <p>The construction of the main components of the substation and onshore export cables will be evident from localised areas of this LCA in proximity to the works. The experience of construction activities and the introduction of the main components of the substation will be limited by the flat terrain and areas of woodland and hedgerow which are a characteristic feature of the local landscape context. When visible, partially constructed features may alter certain views of the ‘<i>dramatic, dominating skylines</i>’. However, the large scale nature of views of the sky is such that development in a localised area of the LCA will result in a small scale of change to this key characteristic.</p> <p>The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be largely reversible. However, the main components of the onshore substation constructed during this phase will remain into the operational phase.</p> <p>The magnitude of landscape change during construction for the LCA will be medium-low locally (outside the onshore substation zone and within 1km approximately – the magnitude of change within the substation zone has been considered in Table 30.7), and barely perceptible for the LCA as a whole. Effects will be short-term and localised within the LCA.</p> <p>Taking account of the medium-low sensitivity, the landscape effects for this LCA are judged to be minor adverse, which is not significant in EIA terms.</p>
Operational Effects	<p>Landscape change experienced in the LCA will be limited to the onshore substation and its immediate setting. The flat nature of the terrain and areas of existing woodland and hedgerows, which are characteristic feature of this LCA, will help to screen and break up views of the infrastructure. When visible, substation components may alter certain views of the ‘<i>dramatic, dominating skylines</i>’. However, the large scale nature of views of the sky is such that development in a localised area of the LCA will result in a small scale of change to this key characteristic. The onshore substation will be largely imperceptible from much of the wider area of this LCA.</p> <p>Once operational (and following the reinstatement of any temporarily removed sections of hedgerows) effects associated with the onshore export cables will be very localised, and associated with any above ground ‘link boxes’ at jointing bays along the onshore export cables.</p> <p>The duration of these landscape effects will be long-term, throughout the operational phase of the Project.</p> <p>The magnitude of landscape change during operation for the LCA will be low locally within approximately 1km (outside the onshore substation zone – effects inside the substation zone have been considered in Table 30.7), and negligible for the LCA as a whole. Taking account of the medium-low sensitivity of the LCA, landscape effects are judged to be minor adverse, which is not significant in EIA terms.</p>

**Table 30.9 Effects on 2C – Holland Haven Drained Estuarine/ Coastal Marsh LCA**

Receptor	2C – Holland Haven Drained Estuarine/ Coastal Marsh LCA
Baseline Description	<p>A section of the onshore cable corridor(s) is located in the LCA (refer to Figure 30.1.3, Volume II).</p> <p>The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows:</p> <ul style="list-style-type: none"> <li>• “<i>Small character area on the coastal edge separating Clacton and Frinton.</i>”</li> </ul>

Receptor	2C – Holland Haven Drained Estuarine/ Coastal Marsh LCA
	<ul style="list-style-type: none"> <li>• Former open estuarine marsh associated with Holland Brook, enclosed by a sea wall in the 17th century.</li> <li>• Concrete sea wall withstands the eroding forces of the sea and a series of groyne and breakwaters along the coastal side of the wall protects the sandy beach.</li> <li>• Golf course occupies part of former grazing marsh.</li> <li>• A golf club house is the only built development resulting in a remote, tranquil character.</li> <li>• Long views over the landscape from the coastal sea wall and from Great Holland.”</li> </ul>
Sensitivity	<p>The smaller scale, coastal character with areas of more remote character indicate a medium-high sensitivity, to the type of development proposed.</p> <p>The LCA is not in any designated landscapes, indicating a lower value.</p> <p>Overall, the landscape sensitivity of this LCA to the type of development proposed, is judged to be medium-high.</p>
Construction/ Decommissioning Effects	<p>The export cables will be constructed through the use of HDD below this area, and there will be no direct landscape effects on the LCA.</p> <p>The duration of construction effects will be short-term, and any disturbance necessary to facilitate construction will be reversible.</p> <p>The magnitude of landscape change during construction for the LCA will negligible. Taking account of the medium-high sensitivity, landscape effects for this LCA are judged to be minor adverse, which is not significant in EIA terms.</p>
Operational Effects	<p>Once operational, the magnitude of landscape change will be barely perceptible, and landscape effects associated with an underground cable are considered to be negligible and not significant in EIA terms.</p>

**Table 30.10 Effects on 3D – Holland Coastal Slopes LCA**

Receptor	3D – Holland Coastal Slopes LCA
Baseline Description	<p>A small section of the onshore cable corridor(s) and the landfall is located in the LCA (refer to Figure 30.1.3, Volume II).</p> <p>The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows:</p> <ul style="list-style-type: none"> <li>• “Coastal slopes between Clacton and Frinton descend, gradually and uniformly, to the flat marshes of the coastal edge.</li> <li>• Large scale, regimented fields of late enclosure enhance the smooth descending landform.</li> <li>• Arable fields divided by low, scrubby and intermittent hedgerows.</li> <li>• Belts of poplar, but little woodland.</li> <li>• The low density suburbs of Frinton expand onto the slopes.</li> <li>• Views over Holland Haven.”</li> </ul>
Sensitivity	<p>The gently undulating terrain, larger scale, land use and settlement pattern indicate a medium sensitivity, to the type of development proposed.</p> <p>The LCA is not in any designated landscapes, indicating a lower value.</p> <p>Overall, the landscape sensitivity of this LCA to the type of development proposed, is judged to be medium.</p>
Construction/ Decommissioning Effects	<p>Beyond the temporary direct landscape changes arising from the construction of the onshore export cables and landfall construction compound (and associated disturbance due to drilling), no further direct landscape effects on this LCA will occur. Temporary disturbance to farmland and hedgerows/ field boundaries will not extend beyond the cable corridor(s), to the wider extents of the LCA.</p>

Receptor	3D – Holland Coastal Slopes LCA
	<p>The construction of the onshore export cables will be evident from localised areas of this LCA in certain close to medium distance views. This is unlikely to notably alter the ‘views over Holland Haven’.</p> <p>The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be reversible.</p> <p>The magnitude of landscape change during construction for the LCA will be low locally (around the cable corridor(s)), and negligible for the LCA as a whole. Taking account of the medium sensitivity, landscape effects for this LCA are judged to be minor adverse, which is not significant in EIA terms.</p>
Operational Effects	<p>Once operational, the magnitude of landscape change will be barely perceptible, and landscape effects associated with an underground cable are considered to be negligible, which is not significant in EIA terms. Any sections of hedgerow temporarily removed during construction of the onshore export cables will be reinstated. Operational landscape effects will be very localised, and associated with any above ground ‘link boxes’ at jointing bays along the onshore export cable and at the transition joint bays at landfill.</p>

**Table 30.11 Effects on 8B – Clacton and the Sokens Clay Plateau LCA**

Receptor	8B – Clacton and the Sokens Clay Plateau LCA
Baseline Description	<p>A section of the onshore cable corridor(s) is located in the LCA (refer to Figure 30.1.3, Volume II).</p> <p>The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows:</p> <ul style="list-style-type: none"> <li>• <i>“Gently undulating agricultural plateau, drained by the Holland Brook Valley System, in the south-east of Tendring.</i></li> <li>• <i>Underlain by a solid geology of London Clay which gives rise to slowly permeable, seasonally waterlogged clayey soils and standing water.</i></li> <li>• <i>Low, gappy hedgerows with occasional hedgerow trees divide arable fields.</i></li> <li>• <i>Remnants of ancient oak and sweet chestnut coppice woodland, including Weeleyhall Wood, one of the finest woods in the district.</i></li> <li>• <i>Good access provided by the A133, B1033 and B1441 which form a backbone for the ribbon development that dominates the areas around Clacton and Frinton.</i></li> <li>• <i>Urban fringe character enhanced by presence of nurseries, caravan parks, paddocks, holiday parks and industrial estates on the edges of Clacton and Frinton.</i></li> <li>• <i>Thorpe-le-Soken is a rural settlement, important in medieval times, and has a wealth of historic buildings.”</i></li> </ul>
Sensitivity	<p>The gently undulating terrain and urban fringe character indicate a medium-low sensitivity, to the type of development proposed.</p> <p>The LCA is not in any designated landscapes, indicating a lower value.</p> <p>Overall, the landscape sensitivity of this LCA to the type of development proposed, is judged to be medium-low.</p>
Construction/Decommissioning Effects	<p>Beyond the temporary direct landscape changes arising from the construction of the onshore export cables, no further direct landscape effects on this LCA will occur. Temporary disturbance to farmland and hedgerows/ field boundaries will not extend beyond the cable corridor(s), to the wider extents of the LCA. As far as possible, areas of woodland and ‘important’ hedgerows will be avoided either through ongoing route selection or through the use of HDD.</p> <p>The construction of the onshore export cable will however be evident from localised areas of this LCA in certain close to medium distance views. This is unlikely to notably alter the ‘urban fringe character’.</p>

Receptor	8B – Clacton and the Sokens Clay Plateau LCA
	<p>The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be reversible.</p> <p>The magnitude of landscape change during construction for the LCA will be low locally (around the cable corridor(s)), and negligible for the LCA as a whole. Taking account of the medium-low sensitivity, landscape effects for this LCA are judged to be minor adverse, which is not significant in EIA terms.</p>
Operational Effects	<p>Once operational, the magnitude of landscape change will be barely perceptible, and landscape effects associated with an underground cable are considered to be negligible, which is not significant in EIA terms. Any sections of hedgerow temporarily removed during construction of the onshore export cable will be reinstated. Operational landscape effects will be very localised, and associated with any above ground 'link boxes' at jointing bays along the onshore export cable as the land will be reinstated and returned to landowners to farm.</p>

**Table 30.12 Effects on 3A – Hamford Coastal Slopes LCA**

Receptor	3A – Hamford Coastal Slopes LCA
Baseline Description	<p>A section of the onshore cable corridor(s) (3 corridor options around Thorpe-le-Soken) is located in the LCA (refer to Figure 30.1.3, Volume II).</p> <p>The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows:</p> <ul style="list-style-type: none"> <li>• <i>“Gently sloping land encircling, and forming the setting of, the open marshes of Hamford Water.</i></li> <li>• <i>Low, scrubby and intermittent hedgerows divide regimented fields typical of late enclosure.</i></li> <li>• <i>Scattered farmsteads and manorial halls form a dispersed settlement pattern.</i></li> <li>• <i>Kirby-le-Soken is an historic settlement, located along the southern edge of Hamford Water.</i></li> <li>• <i>Outskirts of Harwich and Frinton continue to expand onto the coastal slopes over-looking Hamford Water.</i></li> <li>• <i>Panoramic views over Hamford Water towards Harwich.”</i></li> </ul>
Sensitivity	<p>This LCA has been altered by settlement, however the gently sloping terrain and inter-visibility with Hamford Water indicate a medium sensitivity overall, to the type of development proposed.</p> <p>The LCA is not in any designated landscapes, indicating a lower value.</p> <p>Overall, the landscape sensitivity of this LCA to the type of development proposed, is judged to be medium.</p>
Construction/ Decommissioning Effects	<p>Beyond the temporary direct landscape changes arising from the construction of the onshore export cables, no further direct landscape effects on this LCA will occur. Temporary disturbance of farmland and hedgerows/ field boundaries will not extend beyond the cable corridor(s), to the wider extents of the LCA.</p> <p>The construction of onshore export cables will however be evident from localised areas of this LCA in certain close to medium distance views. This is unlikely to notably alter the <i>‘panoramic views over Hamford Water towards Harwich’</i>.</p> <p>The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be largely reversible.</p> <p>The magnitude of landscape change during construction for the LCA will be low locally (around the cable corridor(s)), and negligible for the LCA as a whole. Taking account of the medium sensitivity, landscape effects for this LCA are judged to be minor adverse, which is not significant in EIA terms. Effects will be similar for each of the 3 corridor options in this LCA.</p>



Receptor	3A – Hamford Coastal Slopes LCA
Operational Effects	Once operational, the magnitude of landscape change will be barely perceptible, and landscape effects associated with an underground cable are considered to be negligible, which is not significant in EIA terms. Any sections of hedgerow temporarily removed during the construction of the onshore export cable will be reinstated. Operational landscape effects will be very localised and associated with any above ground 'link boxes' at jointing bays along the onshore export cable.

**Table 30.13 Effects on 8A – Tendring and Wix Clay Plateau LCA**

Receptor	8A – Tendring and Wix Clay Plateau LCA
Baseline Description	<p>A section of the onshore cable corridor(s) is located in the LCA (refer to Figure 30.1.3, Volume II).</p> <p>The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows:</p> <ul style="list-style-type: none"> <li>• <i>“Gently undulating rural agricultural plateau in the north-east of Tendring underlain by London Clay.</i></li> <li>• <i>Remote rural arable landscape of large scale, geometric fields divided by low, gappy hedgerows with occasional hedgerow trees.</i></li> <li>• <i>Small remnants of ancient woodlands have a neglected coppice with standards structure.</i></li> <li>• <i>Ancient settlement pattern of scattered farmsteads and villages.</i></li> <li>• <i>Village greens are typical of villages, although many of these greens have been infilled by housing.</i></li> <li>• <i>Network of narrow lanes connects the scattered farms and villages.</i></li> <li>• <i>Views of church towers and spires across the landscape.”</i></li> </ul>
Sensitivity	<p>The terrain, settlement pattern and rural land use indicate a medium-low sensitivity, to the type of development proposed.</p> <p>The LCA is not in any designated landscapes, indicating a lower value.</p> <p>Overall, the landscape sensitivity of this LCA to the type of development proposed, is judged to be medium-low.</p>
Construction/Decommissioning Effects	<p>Beyond the temporary direct landscape changes arising from the construction of the onshore export cables, no further direct landscape effects on this LCA will occur. Temporary disturbance of farmland and hedgerows/ field boundaries will not extend beyond the cable corridor(s), to the wider extents of the LCA. As far as possible, areas of woodland and 'important' hedgerows will be avoided either through ongoing route selection or through the use of HDD.</p> <p>The construction of onshore export cables will however be evident from localised areas of this LCA in certain close to medium distance views. This is unlikely to notably alter the <i>'views of church towers and spires across the landscape'</i>.</p> <p>The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be largely reversible.</p> <p>The magnitude of landscape change during construction for the LCA will be low locally (around the cable corridor(s)), and negligible for the LCA as a whole. Taking account of the medium sensitivity, landscape effects for this LCA are judged to be minor adverse, which is not significant in EIA terms.</p>
Operational Effects	Once operational, the magnitude of landscape change will be barely perceptible, and landscape effects associated with an underground cable are considered to be negligible, which is not significant in EIA terms. Any sections of hedgerow temporarily removed during construction of the onshore export cables will be reinstated. Operational landscape effects will be very localised, and associated with any above ground 'link boxes' at jointing bays along the onshore export cable.

**Table 30.14 Effects on 6D – Holland Valley System (Clay Valleys) LCA**

Receptor	6D – Holland Valley System (Clay Valleys) LCA
Baseline Description	<p>A small section of the onshore cable corridor(s) is located in the LCA (refer to Figure 30.1.3, Volume II).</p> <p>The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows:</p> <ul style="list-style-type: none"> <li>• <i>“Steep sided valley containing Holland Brook and its tributaries, Tendring Brook and Weeley Brook and Picker’s Ditch.</i></li> <li>• <i>Contrast with the flat landscapes of the Tendring Plateau.</i></li> <li>• <i>Seasonally waterlogged soils support a mixed wooded and pastoral landscape.</i></li> <li>• <i>Ancient woodlands, typically dominated by oak, ash and sweet chestnut, are located in the wetter areas and on the steeper slopes.</i></li> <li>• <i>Lanes drop down the valley sides and cross the streams, at historic crossing points, on stone or brick bridges.</i></li> <li>• <i>Typically devoid of built development except for isolated cottages and a former corn mill at crow bridge.</i></li> <li>• <i>Picker’s Ditch has been encroached upon by residential development at Clacton.</i></li> <li>• <i>Forms a setting to the Holland Floodplain SSSI.”</i></li> </ul>
Sensitivity	<p>The valley terrain, lack of development and areas of ancient woodland indicate a medium-high sensitivity, to the type of development proposed.</p> <p>The LCA is not in any designated landscapes, indicating a lower value.</p> <p>Overall, the landscape sensitivity of this LCA to the type of development proposed, is judged to be medium-high.</p>
Construction/Decommissioning Effects	<p>Beyond the temporary direct landscape changes arising from the construction of the onshore export cables, no further direct landscape effects on this LCA will occur. Temporary disturbance farmland and hedgerows/ field boundaries will not extend beyond the cable corridor(s), to the wider extents of the LCA. As far as possible, areas of woodland and ‘important’ hedgerows will be avoided either through ongoing route selection or through the use of HDD. In addition, HDD will also be used to cross larger watercourses, including those that feed into Holland Brook.</p> <p>The construction of the onshore export cables will be evident from localised areas of this LCA in certain close to medium distance views. Given the very short section of this LCA that the onshore export cables pass through, this is unlikely to alter the role the landscape plays in providing a setting to Holland Brook valley.</p> <p>The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be reversible.</p> <p>The magnitude of landscape change during construction for the LCA will be low locally (around the cable corridor(s)), and negligible for the LCA as a whole. Taking account of the medium-high sensitivity, landscape effects for this LCA are judged to be minor adverse, which is not significant in EIA terms.</p>
Operational Effects	<p>Once operational, the magnitude of landscape change will be barely perceptible, and landscape effects associated with an underground cable are considered to be negligible, which is not significant in EIA terms. Any sections of hedgerow temporarily removed during construction of the onshore export cable will be reinstated. Operational landscape effects will be very localised, and associated with any above ground ‘link boxes’ at jointing bays along the onshore export cable.</p>

### 30.6.5 Potential visual effects during construction, operation and decommissioning

87. This section describes the construction, operational and decommissioning effects resulting from the onshore components of the Project on visual receptors. Receptors are assessed by considering the views from representative viewpoints and routes as noted in Table 30.6 and viewpoint locations are illustrated in Figure 30.1.2 (Volume II). The visualisations which accompany this assessment have been created using photography captured in summer only. For the final ES, summer and winter views will be provided for the visualisations. Further information on the baseline views for each receptor is provided below.
88. The majority of visual effects which will occur during the construction/ decommissioning phase will be short-term, reversible and adverse. These effects will also be transient, particularly as construction work moves in stages along the cable corridor(s).
89. Given the short term, reversible and transient nature of construction effects associated with the onshore export cable and landfall, representative viewpoints have focused on views which include the onshore substation. During operation, as the export cable will be underground, operational visual effects have not been considered through representative viewpoints.
90. All operational effects associated with the onshore substation are considered to be long-term, reversible and adverse, unless stated otherwise. Accompanying visualisations for each assessment viewpoint are contained in Volume II of the PEIR prepared in accordance with the methodology set out in Appendix 29.1 (Volume III). The visualisations include a baseline view and a year 1 photomontage. Residual effects, once landscape mitigation has established by year 15, are considered further in Section 30.6.6. For the purposes of PEIR, a worst case scenario has been assumed. The exact location of the substation within the onshore substation zone, the final details of the various components, and the required mitigation, has not been developed.
91. Once substation details are confirmed, a detailed landscape mitigation plan will be developed, potentially including screen planting, bunding and other measures. It is therefore highly likely that maturing landscape mitigation (including areas of native woodland planting and hedgerows) will assist in integrating the substation operational footprint and infrastructure contained therein into the wider landscape fabric of farmland, hedgerows and areas of woodland, helping to reduce the level of effect from certain landscape and visual receptors.
92. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects. This will be supported by visualisations which show maturing landscape mitigation at year 15.
93. The onshore visualisations presented for PEIR illustrate the potential maximum height (15m) of the largest proposed building across the indicative onshore substation operational footprint. The indicative footprint of the operational substation covers a larger area (300m x 267m) than the footprint of the proposed largest building (50m x 15m). The visualisations therefore represent the maximum envelope for the components of the indicative operational footprint. In addition, the 18m high vertical extents to take into account the

lightening rod have also been illustrated. It should also be noted that buildings would only be required for a GIS substation. Should an AIS solution be pursued then substation infrastructure does not need to be housed inside a building. As such, the visualisations presented for PEIR present a worst case development envelope.

**Table 30.15 Viewpoint 1 - Court Farm, Stutton Road**

Receptor	Viewpoint 1 - Court Farm, Stutton Road			
Grid Reference	612400	234489	Figure Number	30.2.1 (Volume II)
LCA	Plateau Farmland (Suffolk)		Landscape Designation	Suffolk Coast and Heaths AONB
Direction of View	South		Distance	7.1km
Baseline Description	<p>This viewpoint is located in Court Farm on Stutton Road. It is representative of views looking south over the Stour Estuary, in the Suffolk Coast and Heaths AONB as experienced by residents and recreational users to the north of the Stour Estuary.</p> <p>The view looks over pastoral farmland, which falls in elevation towards the Stour Estuary. South of the estuary the rising landform is characterised by settlement (including Manningtree), woodland and farmland. The horizon of the gently undulating plateaux south of the estuary is characterised by woodland cover. Some larger scale vertical elements, including communications masts and steel tower electricity pylons, are also apparent on the skyline, in longer distance views.</p>			
Sensitivity	Residents and recreational users to the north of the Stour Estuary are considered to be of high to medium-high susceptibility. The viewpoint is located in an AONB indicating a higher value. The overall sensitivity at this viewpoint is judged to be high.			
Construction/Decommissioning Effects	<p>During construction, activity associated with taller components of the onshore substation such as cranes may be apparent above the distant wooded horizon, in views to the south. Due to the viewing distance these features will be small in scale and seen in the context of a horizon which has been altered by vertical features, including electricity infrastructure.</p> <p>The scale of change is judged to be barely perceptible. The geographical extent is judged to be medium. Similar views will be experienced from locations north of the Stour Estuary, with more open views to the south.</p> <p>The overall magnitude of change is judged to be negligible. Taking account of the high sensitivity, effects are judged to be negligible, which is not significant in EIA terms.</p>			
Operational Effects	<p>Refer to Figure 30.2.1b and c (Volume II). Once operational, intervening vegetation will screen the onshore substation (maximum height of components within the onshore substation operational footprint is 15m with an additional 3m high lighting rod).</p> <p>Negligible, which is not significant in EIA terms.</p> <p>Given the lack of visibility, this viewpoint will not be included in the ES.</p>			

**Table 30.16 Viewpoint 2 - Bridleway at Barn Lane**

Receptor	Viewpoint 2 - Bridleway at Barn Lane (PRoW170-57)			
Grid Reference	609119	229055	Figure Number	30.2.2 (Volume II)
LCA	7A Heathland Plateaux – Bromley Heaths		Landscape Designation	N/A
Direction of View	South-west		Distance	1km

Receptor		Viewpoint 2 - Bridleway at Barn Lane (PRoW170-57)	
Baseline Description	<p>This viewpoint is located on the bridleway at Barn Lane, to the west of Little Bromley. It is representative of views experienced by recreational users of the bridleway, looking south-west towards the onshore substation zone. Views from nearby properties, to the west of Little Bromley, are largely screened/ filtered by intervening vegetation.</p> <p>The view looks over flat arable farmland, which includes the onshore substation zone. Woodland and hedgerow planting along Grange Road and around the existing substation on Ardleigh Road contain longer distance views to the west. Farmland and woodland/ hedgerows to the south of Ardleigh Road are apparent to the south-west. Some larger scale vertical elements, including steel tower electricity pylons (which link into existing substation on Ardleigh Road) are also apparent on the skyline, in middle to longer distance views.</p>		
Sensitivity	<p>Recreational users of the bridleway are considered to be of medium-high susceptibility. The viewpoint is not located in a designated landscape, indicating a lower value. The overall sensitivity at this viewpoint is judged to be medium.</p>		
Construction/ Decommissioning Effects	<p>During construction, close proximity views to the south-west (1km) of construction activity and plant will be available. As recreational users of the bridleway walk along the path, the level of visibility will change dependent on hedgerow cover between the path and the site. There are locations with gaps/ breaks in the hedgerow, which will offer open views to construction. Parts of the field in the foreground to the south-west of the view will change from that of open arable farmland to a construction site.</p> <p>The scale of change is judged to be medium-high. The geographical extent is judged to be small, as this represents glimpsed views from the bridleway which passes along the northern extents of the site boundary.</p> <p>The overall magnitude of change is judged to be medium. Taking account of the medium sensitivity, effects are judged to be moderate adverse, which is significant in EIA terms.</p>		
Operational Effects	<p>Refer to Figure 30.2.2b and c (Volume II).</p> <p>Once operational, close proximity views (1km) of the onshore substation will be available to the south-west. This will include views of security fencing and substation infrastructure, some of which may be seen above the wooded horizon. This will change the character of the foreground of the view, from open arable farmland to that of a more industrialised character. As recreational users of the bridleway move along the path, the level of visibility will change dependent on hedgerow cover between the path and the site. There are locations with gaps/ breaks in the hedgerow, which will offer open views to the onshore substation. Landscape mitigation will offer little additional screening at year 1.</p> <p>The scale of change is judged to be medium-high. The geographical extent is judged to be small.</p> <p>The overall magnitude of change is judged to be medium.</p> <p>Moderate adverse, which is significant in EIA terms.</p>		

**Table 30.17 Viewpoint 3 - Norman's Farm**

Receptor		Viewpoint 3 – Norman's Farm	
Grid Reference	608405	228479	Figure Number 30.2.3 (Volume II)
LCA	7A Heathland Plateaux – Bromley Heaths		Landscape Designation N/A

Receptor	Viewpoint 3 – Norman's Farm		
Direction of View	North-west	Distance	400m
Baseline Description	<p>This viewpoint is located on Ardleigh Road near Normans' Farm. It is representative of secondary views experienced by residents at the property, looking north-west towards the proposed onshore substation zone and open views from the road as it passes to the south of the site.</p> <p>The view looks over flat arable farmland, which includes the onshore substation zone. Woodland and hedgerow planting along Grange Road and Barn Lane contain longer distance views to the north-west. Some larger scale vertical elements, including steel tower electricity pylons, are also apparent on the skyline in middle to longer distance views and crossing the north-western edge of the proposed onshore substation zone and linking into the existing substation of Ardleigh Road, to the west (left of the view). Mature vegetation around this existing substation screen views of this feature.</p>		
Sensitivity	<p>Residents are considered to be of high susceptibility. The viewpoint is not located in a designated landscape, indicating a lower value. The overall sensitivity at this viewpoint is judged to be medium-high.</p>		
Construction/Decommissioning Effects	<p>During construction, close proximity views to the north-west (400m) of construction activity and plant will be available. The foreground of the view will change from that of open arable farmland to a construction site in secondary residential views from the property at Norman's Farm.</p> <p>The scale of change is judged to be high. The geographical extent is judged to be small, as this represents close proximity secondary views from a single property.</p> <p>The overall magnitude of change is judged to be high.</p> <p>Major adverse, which is significant in EIA terms.</p>		
Operational Effects	<p>Refer to Figure 30.2.3b and c (Volume II).</p> <p>Once operational close proximity views to the north-west (400m) of the onshore substation will be available. This will include views of security fencing and substation infrastructure which will be seen above the wooded horizon. This will change the character of the foreground of the view, from open arable farmland to that of a more industrialised character. Landscape mitigation will offer little additional screening, at year 1.</p> <p>The scale of change is judged to be large. The geographical extent is judged to be small.</p> <p>The overall magnitude of change is judged to be high. Taking account of the medium-high sensitivity, effects are judged to be major adverse, which is significant in EIA terms.</p>		

**Table 30.18 Viewpoint 4 - Little Bromley Road to west**

Receptor	Viewpoint 4 - Little Bromley Road to west			
Grid Reference	607484	228723	Figure Number	30.2.4 (Volume II)
LCA	7A Heathland Plateaux – Bromley Heaths		Landscape Designation	N/A
Direction of View	East		Distance	250m
Baseline Description	<p>This viewpoint is located on Little Bromley Road, to the west of the onshore substation zone. It is representative of direct and glimpsed views experienced by road users, through a gap in the roadside hedgerow, looking east towards the onshore substation zone.</p> <p>The view looks over flat arable farmland. Direct views into the zone are screened by a hedgerow, with occasional trees, along Grange Road to the east of the zone. Woodland and infrastructure in the existing substation on Ardleigh Road are apparent to the right (south) of view. Some larger scale vertical elements, including steel tower electricity pylons, are also apparent on the skyline in middle to longer distance views and crossing the north-western edge of the onshore substation zone.</p>			
Sensitivity	<p>Road users using the local road network are considered to be of medium susceptibility. The viewpoint is not located in a designated landscape, indicating a lower value. The overall sensitivity at this viewpoint is judged to be medium-low.</p>			
Construction/Decommissioning Effects	<p>During construction, middle distance views to the east (250m) of construction activity and plant will be available, seen behind and above intervening hedgerow cover on Grange Road. This hedgerow will help to screen lower level construction activity. The level of visibility will change as road users move along Little Bromley Road, due to roadside hedgerow cover to the north of the road. The viewpoint has been taken at a gap in the hedgerow.</p> <p>The scale of change is judged to be medium. The geographical extent is judged to be small, as this represents glimpsed views through a hedgerow on Little Bromley Road.</p> <p>The overall magnitude of change is judged to be medium. Taking account of the medium-low sensitivity, effects are judged to be moderate adverse, which is significant in EIA terms, and where more open views through gaps in the hedgerow are available.</p>			
Operational Effects	<p>Refer to Figure 30.2.4b and c (Volume II).</p> <p>Once operational middle distance views to the east (250m) of the onshore substation will be available, seen behind and above intervening hedgerow cover on Grange Road. This hedgerow will help to screen lower level components in the substation siting zone, including security fencing. This new infrastructure will be seen in the context of a view which has been altered by substation infrastructure, as parts of the existing substation to the south of Ardleigh Road are visible above an intervening hedgerow. The level of visibility will change as road users move along Little Bromley Road, due to roadside hedgerow cover to the north of the road. The viewpoint has been taken at a gap in this hedgerow.</p> <p>The scale of change is judged to be medium. The geographical extent is judged to be small.</p> <p>The overall magnitude of change is judged to be medium.</p> <p>Moderate adverse, which is significant in EIA terms, and where more open views through gaps in the hedgerow are available.</p>			

**Table 30.19 Viewpoint 5 - PRoW near Lilley's Farm**

Receptor		Viewpoint 5 - PRoW near Lilley's Farm (PRoW 172_15)		
Grid Reference	607763	228002	Figure Number	30.2.5 (Volume II)
LCA	7A Heathland Plateaux – Bromley Heaths		Landscape Designation	N/A
Direction of View	North-east		Distance	600m
Baseline Description	<p>This viewpoint is located on a PRoW to the north of Lilley's Farm, to the south-west of the onshore substation zone. It is representative of direct views from the footpath, looking north-east towards the onshore substation zone.</p> <p>The view looks over flat arable farmland. Direct views into the zone are partially screened/ filtered by intervening vegetation in field boundaries to the south of Ardleigh Road. Some larger scale vertical elements, including steel tower electricity pylons, are also apparent on the skyline in middle to longer distance views and crossing the north-western edge of the proposed onshore substation zone. These steel tower electricity pylons link into the existing substation on Ardleigh Road, which is well screened by mature trees and vegetation from this viewing angle.</p>			
Sensitivity	Recreational users of the PRoW are considered to be of medium-high sensitivity. The viewpoint is not located in a designated landscape, indicating a lower value. The overall sensitivity at this viewpoint is judged to be medium.			
Construction/ Decommissioning Effects	<p>During construction, middle distance views to the north-east (600m) of construction activity and plant will be available, seen behind and above intervening vegetation in field boundaries to the south of Ardleigh Road. This vegetation will help to screen lower level construction activity. The level of visibility will change as recreational users move along PRoW, with views becoming more open with proximity to Ardleigh Road.</p> <p>The scale of change is judged to be medium. The geographical extent is judged to be small, as this represents views from a short section of the PRoW, to the north of Lilley's Farm.</p> <p>The overall magnitude of change is judged to be medium. Taking account of the medium sensitivity, effects are judged to be moderate adverse, which is significant in EIA terms.</p>			
Operational Effects	<p>Refer to Figure 30.2.5b and c (Volume II).</p> <p>Once operational, middle distance views of the proposed onshore substation will be available to the north-east (600m), seen behind and potentially above intervening vegetation in field boundaries to the south of Ardleigh Road (including mature planting around the exiting substation). This vegetation will help to screen lower level features including the security fencing. The level of visibility will change as recreational users move along PRoW, with views becoming more open with proximity to Ardleigh Road.</p> <p>The scale of change is judged to be medium. The geographical extent is judged to be small.</p> <p>The overall magnitude of change is judged to be medium.</p> <p>Moderate adverse, which is significant in EIA terms.</p>			



**Table 30.20 Viewpoint 6 - Grange Road to north**

Receptor	Viewpoint 6 – Grange Road to north			
Grid Reference	609147	230544	Figure Number	30.2.6 (Volume II)
LCA	7A Heathland Plateaux – Bromley Heaths		Landscape Designation	N/A
Direction of View	South-west		Distance	2km
Baseline Description	<p>This viewpoint is located at the intersection of Grange Road and a PRoW to the south of Lawford. It is representative of direct views from the footpath, looking south-west towards the onshore substation zone.</p> <p>The view looks over flat arable farmland. Direct views into the zone are screened by intervening vegetation including hedgerows and trees along Barn Lane, to the north of the site. Some larger scale vertical elements, including steel tower electricity pylons, are also apparent on the skyline in close proximity to longer distance views and crossing the north-western edge of the proposed onshore substation zone.</p>			
Sensitivity	<p>Recreational users of the PRoW are considered to be of medium-high susceptibility. The viewpoint is not located in a designated landscape, indicating a lower value. The overall sensitivity at this viewpoint is judged to be medium.</p>			
Construction/ Decommissioning Effects	<p>During construction, middle distance views of construction activity and plant may be available to the south-west (2km), seen behind and above intervening vegetation (including trees and hedgerows along Barn Lane). This vegetation will help to screen much construction activity. The level of visibility will change as road users move along Grange Road, with hedgerow planting to the south and east of the road providing screening. The PRoW follows a different route to Grange Road south of this viewpoint, following a minor track directly south where views to the south-west are more open in nature.</p> <p>The scale of change is judged to be medium-small. The geographical extent is judged to be small, as this represents glimpsed views through a hedgerow on Grange Road.</p> <p>The overall magnitude of change is judged to be low. Taking account of the medium sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms.</p>			
Operational Effects	<p>Refer to Figure 30.2.6b and c (Volume II).</p> <p>Once operational, middle distance views of the onshore substation may be available to the south-west (2km), seen behind and potentially above intervening vegetation (including trees and hedgerows along Barn Lane). This vegetation will help to screen features such as security fencing and operational components in the substation siting zone. The level of visibility will change as road users move along Grange Road, with hedgerow planting to the south and east of the road providing screening.</p> <p>The scale of change is judged to be medium-small. The geographical extent is judged to be small.</p> <p>The overall magnitude of change is judged to be low.</p> <p>Minor adverse, which is not significant in EIA terms.</p>			

**Table 30.21 Viewpoint 7 – ProW near Little Bromley Hall**

Receptor	Viewpoint 7 – PRoW near Little Bromley Hall (PRoW 172_14 and 172_16)			
Grid Reference	609063	227889	Figure Number	30.2.7 (Volume II)
LCA	7A Heathland Plateaux – Bromley Heaths		Landscape Designation	N/A
Direction of View	North-west		Distance	1.3km
Baseline Description	<p>This viewpoint is located on the PRoW to the west of Little Bromley Hall. It is representative of slightly oblique views from the footpath, looking north-west towards the onshore substation zone.</p> <p>The view looks over flat arable farmland. Direct views into the zone are partially obscured by intervening vegetation including mature trees in the field boundaries to the south of Ardleigh Road. The red brick farmhouse of Norman's Farm is visible to the right of the onshore substation zone. The existing substation on Ardleigh Road, surrounded by mature woodland, is just visible to the left of the onshore substation zone (there are glimpses of substation infrastructure seen between the mature vegetation which surrounds this area). Some larger scale vertical elements, including steel tower electricity pylons, are also apparent on the skyline in middle distance views and crossing the north-western edge of the onshore substation zone.</p>			
Sensitivity	<p>Recreational users of the PRoW are considered to be of medium-high susceptibility. The viewpoint is not located in a designated landscape, indicating a lower value. The overall sensitivity at this viewpoint is judged to be medium.</p>			
Construction/ Decommissioning Effects	<p>During construction, middle distance views to the north-west (1.3km) of construction activity and plant will be available, seen behind intervening trees and above vegetation in field boundaries to the north of Ardleigh Road. This vegetation, which includes mature field boundary trees, will help to partially screen construction activity.</p> <p>The scale of change is judged to be medium-small due to the viewing distance and level of screening provided by intervening trees. The geographical extent is judged to be small, as this represents views from a short section of the PROW, to the north of Little Bromley Hall.</p> <p>The overall magnitude of change is judged to be medium-low. Taking account of the medium sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms.</p>			
Operational Effects	<p>Refer to Figure 30.2.7b and c (Volume II).</p> <p>During operation, middle distance views to the north-west (1.3km) of the onshore substation will be available, seen behind intervening trees and above vegetation in field boundaries to the north of Ardleigh Road. This vegetation will help to partially screen substation infrastructure.</p> <p>The scale of change is judged to be medium-small due to the viewing distance and level of screening provided by intervening trees. The geographical extent is judged to be small.</p> <p>The overall magnitude of change is judged to be medium-low.</p> <p>Minor adverse, which is not significant in EIA terms.</p>			

### 30.6.6 Residual effects

94. The likely landscape and visual mitigation is discussed in the Design Vision Document (North Falls, 2023). Landscape mitigation proposals will be secured

through a DCO requirement and an OLEMS which details long term management. At this stage a worst case scenario has been assumed and the exact location of the substation within the onshore substation zone and required mitigation has not been developed. In addition, the final details of the various components in the onshore substation zone and detail of the landscape mitigation proposals are not known. Once this is confirmed, it is highly likely that maturing landscape mitigation (including areas of native woodland planting and hedgerows) will assist in integrating the substation operational footprint and infrastructure contained therein into the wider landscape fabric of farmland, hedgerows and areas of woodland helping to reduce the level of effect from certain landscape and visual receptors.

95. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects. This will be supported by visualisations which show maturing landscape mitigation at year 15. Whilst maturing planting will help to reduce certain landscape and visual impacts, it is likely that some localised landscape and visual residual effects will remain significant.

## 30.7 Cumulative effects

### 30.7.1 Identification of potential cumulative effects

96. The first step in the CEA process is the identification of which effects assessed for North Falls on their own have the potential for cumulative effects with other plans, projects, and activities.
97. The cumulative landscape and visual assessment focuses on operational interactions between the above ground onshore components of the Project and other onshore projects (including consented and proposed substations/ electricity infrastructure) within 2km of the onshore substation zone (see Table 30.22 below).
98. Cumulative landscape and visual interactions during the construction phase will be transient in nature and will depend on the phasing of other potential construction projects considered in the cumulative assessment (refer to Table 30.22). Should all projects considered in the cumulative assessment be constructed at the same time it is likely that cumulative construction phase landscape and visual effects (with partially constructed electricity infrastructure) will be no greater than cumulative operational stage landscape and visual effects (with fully constructed electricity infrastructure).
99. As the onshore export cable will be underground, operational cumulative interactions with this component are not anticipated.
100. Cumulative interactions of onshore infrastructure with offshore projects, such as offshore wind farms, are unlikely to be significant. This is due to the different landscape context/ screening provided by intervening vegetation which limits potential for cumulative intervisibility between the onshore above ground components and offshore projects/ and limited nature of coastal views across the onshore project area. Cumulative interactions between the offshore components of the Project and other consented and proposed offshore wind farms are considered in Chapter 29 SLVIA (Volume I).

### 30.7.2 Other plans, projects, and activities

101. The second step in the cumulative assessment is the identification of the other plans, projects and activities that may result in cumulative effects for inclusion in the CEA (described as 'project screening'). This information is set out in Table 30.22 below, together with a consideration of the relevant details of each, including current status, closest distance to the onshore project area, status of available data and rationale for including or excluding from the assessment.
102. The Project screening has been informed by the development of a CEA project list which forms an exhaustive list of plans, projects, and activities within the study area relevant to North Falls. 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.
103. Cumulative interactions with projects scoped into the cumulative assessment, as set out in Table 30.22, are considered in the cumulative assessment (see Table 30.23).

**Table 30.22 Summary of projects considered in the CEA in relation to Landscape and Visual (project screening)**

Project	Status	Construction period	Closest distance from the onshore project area (km)	Confidence in data	Included in the CEA (Y/N)	Rationale
<b>National Infrastructure Planning</b>						
Bradwell B new nuclear power station	Pre-application	Pre-application	21km	High	No	All projects are located outside the 2km study area around the onshore substation siting zone. As such, the potential for significant cumulative interactions is limited.
East Anglia TWO Offshore Windfarm	Approved (DCO Issued 2022)	Information unavailable.	47km north east	High	No	
Sizewell C Project	Approved (DCO Issued 2022)	2022 – 2034	49km north east	High	No	
Lake Lothing Third Crossing	Approved (DCO Issued 2020)	Construction over 2 years	76km north east	High	No	
Manston Airport		Information unavailable.	53km south	High	No	
Thanet Extension Offshore Wind Farm	Application refused	Application refused	52km east	High	No	
Sea Link	Pre-application	Pre-application	20km east	High	No	
Ipswich Rail Chord	Approved (DCO Issued 2012)	Built	17km north east	High	No	
Richborough Connection Project	Approved (DCO Issued 2017)	Built	55km south	High	No	
Kentish Flats Extension	Approved (DCO Issued 2013)	Built	46km south	High	No	
Galloper Offshore Wind Farm	Approved	Built	15km north east	High	No	
Nautilus Interconnector	Pre-application	Pre-application	44km north east	Low	No	
Five Estuaries Offshore Wind Farm	Pre-application	Pre-application	Onshore above ground components (proposed substation) within 2km study	Low	Yes	Onshore above ground components (proposed substation) within 2km study area around the onshore substation zone. This will likely be in same general area as the

Project	Status	Construction period	Closest distance from the onshore project area (km)	Confidence in data	Included in the CEA (Y/N)	Rationale
						proposed North Falls substation. Further project details are not available at present, so this has been considered at a high level in the cumulative assessment.
East Anglia GREEN	Pre-application	Pre-application	Proposed substation within 2km study area around the onshore substation siting zone	Low	Yes	Proposed substation within 2km study area around the onshore substation siting zone. Refer to Figure 30.1.5 (Volume II).
A12 Chelmsford to A120 Widening Scheme	Pre-examination	Information unavailable.	27km south west	Low	No	All projects are located outside the 2km study area around the onshore substation siting zone. As such, the potential for significant cumulative interactions is limited.
Rivenhall IWMF and Energy Centre	Pre-application	Information unavailable.	27km west	-	No	
<b>Essex County Council</b>						
Elmstead Hall, Elmstead, Colchester, Essex	Approved	Information unavailable.	5km	N/A	No	All projects are located outside the 2km study area around the onshore substation siting zone. As such, the potential for significant cumulative interactions is limited.
St. George's Infant School and Nursery, Barrington Road, Colchester, Essex, CO2 7RW	Approved	Information unavailable.	9km	N/A	No	
Wilson Marriage Centre, Barrack Street, Colchester, Essex, CO1 2LR	Approved	Information unavailable.	8km	N/A	No	
Wivenhoe Quarry, Alresford Road, Wivenhoe, Essex, CO7 9JU	Report being prepared	Information unavailable.	7km	N/A	No	
Elmstead Hall, Elmstead, Colchester, Essex, CO7 7AT	Approved	Information unavailable.	5km	N/A	No	

Project	Status	Construction period	Closest distance from the onshore project area (km)	Confidence in data	Included in the CEA (Y/N)	Rationale
Elmstead Hall, Elmstead, Colchester, Essex, CO7 7AT	Approved	Information unavailable.	5km	N/A	No	
Old Heath County Primary School, Old Heath Road, Colchester, Essex, CO2 8DD	Approved	Information unavailable.	8km	N/A	No	
Crown Quarry (Wick Farm), Old Ipswich Road, Ardleigh, CO7 7QR	Approved	Information unavailable.	6km	N/A	No	
Wivenhoe Quarry, Alresford Road Wivenhoe, Essex CO7 9JU	Approved	Information unavailable.	7km	N/A	No	
Martells Quarry, Slough Lane, Ardleigh, Essex, CO7 7RU	Out for consultation	Information unavailable.	3km	N/A	No	
Land at: Elmstead Hall, Elmstead, Colchester, Essex	Approved	Information unavailable.	5km	N/A	No	
Land at Martells Quarry, Slough Lane, Ardleigh, Essex, CO7 7RU	Approved	Information unavailable.	3km	N/A	No	
Land to the south of Colchester Main Road, Alresford, Nr Colchester, C07 8DB	Report being prepared	Information unavailable.	6km	N/A	No	
Land at: Martells Quarry, Slough Lane, Ardleigh, Essex, CO7 7RU	Approved	Information unavailable.	3km	N/A	No	

Project	Status	Construction period	Closest distance from the onshore project area (km)	Confidence in data	Included in the CEA (Y/N)	Rationale
Tendring Education Centre, Jaywick Lane, Clacton On Sea, Essex, CO16 8BE	Approved	Information unavailable.	6km	N/A	No	
Tendring Education Centre, Jaywick Lane, Clacton On Sea, Essex, CO16 8BE	Approved	Information unavailable.	6km	N/A	No	
Land At Martells's Quarry, Slough Lane, Ardleigh, Essex CO7 7RU	Approved	Information unavailable.	3km	N/A	No	
Land At Martells's Quarry, Slough Lane, Ardleigh, Essex CO7 7RU	Approved	Information unavailable.	3km	N/A	No	
Crown Quarry (Ardleigh Reservoir Extension), Wick Farm, Old Ipswich Road, Tendring, Colchester, CO7 7QR	Approved	Information unavailable.	6km	N/A	No	
Elmstead Hall, Elmstead, Colchester, Essex	Approved	Information unavailable.	5km	N/A	No	
Ardleigh Waste Transfer Station, A120, Ardleigh, Colchester, CO7 7SL	Approved	Information unavailable.	4km	N/A	No	
35 Roach Vale, Colchester, CO4 3YN	Approved	Information unavailable.	6km	N/A	No	
Boxted Bridge, Boxted, Essex, CO4 5TB	Report being prepared	Information unavailable.	9km	N/A	No	
Elmstead Hall, Elmstead, Colchester, Essex	Approved	Information unavailable.	5km	N/A	No	



Project	Status	Construction period	Closest distance from the onshore project area (km)	Confidence in data	Included in the CEA (Y/N)	Rationale
Lufkins Farm, Great Bentley Road, Frating, CO7 7HN	EIA not required	Information unavailable.	6km	N/A	No	
Lufkins Farm, Great Bentley Road, Frating, CO7 7HN	Resolution made/Awaiting Legal Agreement	Information unavailable.	6km	N/A	No	
Elmstead Hall, Elmstead, Colchester	Approved	Information unavailable.	5km	N/A	No	
Elmstead Hall, Elmstead, Colchester, CO7 7EX	Approved	Information unavailable.	5km	N/A	No	
<b>Tendring District Council</b>						
Land Between The A120 and A133, To The East of Colchester and of Elmstead Market	Awaiting decision	Information unavailable.	3km	High	No	Projects located outside the 2km study area around the onshore substation siting zone. As such, the potential for significant cumulative interactions is limited.
Hamilton Lodge Parsons Hill Great Bromley Colchester Essex CO7 7JB	Approval - Outline	Information unavailable.	2km south	N/A	No	
Land adjacent to Lawford Grid Substation Ardleigh Road Little Bromley Essex CO11 2QB	Consented	Information unavailable.	0.3km	High	Yes	Proposed battery storage within 2km study area around the onshore substation siting zone. Refer to Figure 30.1.5 (Volume II).

### 30.7.3 Assessment of cumulative effects

104. Following a review of projects (presented in Table 30.22) which have the potential to overlap temporally or spatially with North Falls, three developments have been scoped into the CEA for this chapter, these are (and as shown on Figure 30.1.5, Volume II):
- East Anglia GREEN (substation and 400kV overhead lines);
  - Five Estuaries Offshore Wind Farm ('Five Estuaries') (onshore substation); and
  - Land adjacent to Lawford Grid Substation Ardleigh Road Little Bromley Essex CO11 2QB (for construction and operation of a 50MW Battery Energy Storage System ('Little Bromley BESS')).
105. The operational cumulative landscape and visual effects between the proposed onshore substation and these three projects are considered further in Table 30.23. This assessment considers a theoretical future baseline (i.e. in the next 10-15 years) in which these three projects are present in the landscape and views. Where significant effects have been identified in the assessment for North Falls alone (the 'primary assessment'), this will generally carry through into the cumulative assessment. The cumulative assessment therefore focuses on any further and 'additional' cumulative change which may result from the introduction of a proposed development, in this alternative future baseline. The cumulative assessment may also make reference to 'total' (also referred to as 'combined') cumulative effects, where these have the potential to be significant in EIA terms. Given the stage of the proposed Five Estuaries onshore substation and the proposed East Anglia GREEN National Grid substation schemes (pre-application), full project details including detailed location information, are not currently available. As such, cumulative interactions with these schemes is considered at a broad level.
106. These assessments will be undertaken again for the ES, based on the level of information regarding these other projects that is available at that time.

**Table 30.23 Operational Cumulative Landscape and Visual Effects**

Landscape or Visual Receptor	Sensitivity	Cumulative Effects
7A Heathland Plateaux – Bromley Heaths LCA	Medium-low	<p><b><u>'Additional' effects of North Falls in a theoretical future baseline</u></b></p> <p>In a theoretical future cumulative baseline, which includes the Five Estuaries and East Anglia GREEN substations and the consented battery storage scheme (to the west of the existing Lawford substation on Ardleigh Road), the onshore substation will intensify the effects of electricity infrastructure in a localised area of this LCA. This will be focused approximately 1km to the west of Little Bromley (refer to Figure 30.1.5, Volume II).</p> <p>This is a large scale and flatter LCA, where areas of woodland and hedgerows will help to somewhat break up and soften views of the various electricity infrastructure development. Grouping the substations/ electricity infrastructure together will also help to contain effects within a more localised area of the LCA. The proposed onshore substation will be located in an area of the LCA which has been altered by electricity infrastructure, through the</p>

Landscape or Visual Receptor	Sensitivity	Cumulative Effects
		<p>existing Lawford substation south of Ardleigh Road, overhead power lines and, in a theoretical future baseline, Five Estuaries and East Anglia GREEN substations and the consented battery storage scheme.</p> <p>Significant and localised effects on landscape character have been identified in the primary landscape character assessment, on the host Bromley Heaths LCA.</p> <p>With regard to 'additional' cumulative effects, the Five Estuaries and East Anglia GREEN substations will alter and influence landscape character, and the proposed onshore substation will be located in an area which has therefore been influenced by electricity infrastructure. The additional scale of cumulative change will be small. Therefore, effects, in a theoretical future cumulative baseline, will mirror those as identified in the primary assessment.</p> <p><b><u>'Total' cumulative effects of all projects combined</u></b></p> <p>'Total' cumulative effects are predicted to be significant across a localised area of this LCA to the west of Little Bromley. This is due to up to four substations (including the existing substation south of Ardleigh Road) and a battery storage scheme altering the rural character of the LCA. Significant total cumulative effects would likely be the case even were the onshore substation for North Falls not constructed, given the level of additional infrastructure associated with the Five Estuaries and East Anglia GREEN projects. These effects will also decrease over time, as landscape mitigation associated with the various substations matures.</p>
Viewpoint 1 - Court Farm, Stutton Road	High	Due to screening by intervening vegetation and lack of visibility of the North Falls onshore substation, no significant cumulative effects with the East Anglia GREEN and Five Estuaries proposed substations are anticipated.
Viewpoint 2 - Bridleway at Barn Lane	Medium	<p><b><u>'Additional' effects of North Falls in a theoretical future baseline</u></b></p> <p>In a theoretical future cumulative baseline, which assumes the substations for East Anglia GREEN and Five Estuaries are operational, the proposed North Falls onshore substation will be seen in this context, potentially behind the closer proximity Five Estuaries substation. Intervening vegetation will provide a level of screening for proposed substations to the west of Grange Road. Views of the consented battery storage scheme, to the west of the existing substation on Ardleigh Road, will likely be screened by vegetation.</p> <p>Significant visual effects have been identified in the primary visual assessment from this viewpoint. Five Estuaries substation will bring development of this nature closer to the viewpoint and the proposed onshore substation will be seen behind this. The additional scale of cumulative change will be small. Therefore, effects, in a theoretical future cumulative baseline, will mirror those as identified in the primary assessment.</p> <p><b><u>'Total' cumulative effects of all projects combined</u></b></p> <p>Due to the concentration of substations in the view, the potential for significant 'total' cumulative effects cannot be ruled out at this stage until further details on projects included in the cumulative assessment are</p>

Landscape or Visual Receptor	Sensitivity	Cumulative Effects
		confirmed. These effects will likely decrease over time, as landscape mitigation associated with the various substations matures.
Viewpoint 3 - Norman's Farm	Medium-high	<p><b><u>'Additional' effects of North Falls in a theoretical future baseline</u></b></p> <p>In a theoretical future cumulative baseline, which assumes the substations for East Anglia GREEN and Five Estuaries are operational, the proposed North Falls onshore substation will be seen in this context. Intervening vegetation will provide a level of screening for proposed substations to the west of Grange Road. Views of the consented battery storage scheme, to the west of the existing substation on Ardleigh Road, will likely be screened by vegetation.</p> <p>Significant visual effects have been identified in the primary visual assessment from this viewpoint. Whilst the proposed North Falls onshore substation may bring substation development slightly closer to the viewpoint, it will be seen in a context which has been altered by substation development mainly due to the introduction of the Five Estuaries Substation, seen in close proximity views to the north-west.</p> <p>Significant visual effects have been identified in the primary visual assessment from this viewpoint. These significant visual effects will carry through.</p> <p>Five Estuaries substation will likely bring development of this nature closer to the viewpoint and the proposed onshore substation will be seen alongside this. The additional scale of cumulative change will be small. Therefore, effects, in a theoretical future cumulative baseline, will mirror those as identified in the primary assessment.</p> <p><b><u>'Total' cumulative effects of all projects combined</u></b></p> <p>Due to the concentration of substations in the view, the potential for significant 'total' cumulative effects cannot be ruled out at this stage until further details on projects included in the cumulative assessment are confirmed. These effects will likely decrease over time, as landscape mitigation associated with the various substations matures.</p>
Viewpoint 4 - Little Bromley Road to west	Medium-low	<p><b><u>'Additional' effects of North Falls in a theoretical future baseline</u></b></p> <p>In a theoretical future cumulative baseline, which assumes the substations for East Anglia GREEN and Five Estuaries are operational, the proposed North Falls onshore substation will be seen in this context, extending the influence of substation infrastructure and potentially seen behind the East Anglia GREEN substation (depending on detailed location). The consented battery storage scheme, to the west of the existing substation on Ardleigh Road, will also be visible to the south-east of the view in close proximity.</p> <p>Significant visual effects have been identified in the primary visual assessment from this viewpoint. These significant visual effects will likely carry through into the cumulative assessment (but noting that the East Anglia GREEN substation may provide a level of screening in views from this direction). With regard to 'additional' cumulative effects, and in this context, the additional scale of cumulative change will be small. Therefore, effects, in</p>

Landscape or Visual Receptor	Sensitivity	Cumulative Effects
		<p>a theoretical future cumulative baseline, will mirror those as identified in the primary assessment.</p> <p><b><u>'Total' cumulative effects of all projects combined</u></b></p> <p>Due to the concentration of substations in the view, the potential for significant 'total' cumulative effects cannot be ruled out at this stage until further details on projects included in the cumulative assessment are confirmed. These effects will likely decrease over time, as landscape mitigation associated with the various substations matures.</p>
Viewpoint 5 - PRow near Lilley's Farm	Medium	<p><b><u>'Additional' effects of North Falls in a theoretical future baseline</u></b></p> <p>In a theoretical future cumulative baseline, which assumes the substations for East Anglia GREEN and Five Estuaries are operational, the proposed North Falls onshore substation will be seen in this context, extending the influence of substation infrastructure seen in views to the north of Ardleigh Road. Views of the consented battery storage scheme, to the west of the existing substation on Ardleigh Road, will likely be screened by vegetation. Significant visual effects have been identified in the primary visual assessment from this viewpoint. These significant visual effects will carry through into the cumulative assessment. With regard to 'additional' cumulative effects, the proposed onshore substation will be seen in views to the north of Ardleigh Road and likely be contained within the horizontal field of view occupied by the East Anglia GREEN and Five Estuaries substations. In this context, the additional scale of cumulative change will be small. Therefore, effects, in a theoretical future cumulative baseline, will mirror those as identified in the primary assessment.</p> <p><b><u>'Total' cumulative effects of all projects combined</u></b></p> <p>Due to the concentration of substations in the view, the potential for significant 'total' cumulative effects cannot be ruled out at this stage until further details on projects included in the cumulative assessment are confirmed. These effects will likely decrease over time, as landscape mitigation associated with the various substations matures.</p>
Viewpoint 6 - Grange Road to north	Medium	<p><b><u>'Additional' effects of North Falls in a theoretical future baseline</u></b></p> <p>In a theoretical future cumulative baseline, which assumes the substations for East Anglia GREEN and Five Estuaries are operational, the proposed North Falls onshore substation will be seen in this context, behind the proposed Five Estuaries substation. Views of the consented battery storage scheme, to the west of the existing substation on Ardleigh Road, will likely be screened by vegetation.</p> <p>The viewpoint represents a middle distance glimpsed view, through a break in the hedgerow. As road users move south on Grange Road, hedgerows either side of the road and intervening vegetation to the south will increasingly screen combined views of the cumulative substations and the proposed North Falls onshore substation.</p>

Landscape or Visual Receptor	Sensitivity	Cumulative Effects
		<p>In this context, the additional scale of cumulative change will be small. Additional cumulative effects will be minor adverse, which is not significant in EIA terms.</p> <p>No significant visual effects have been identified in the primary visual assessment from this viewpoint, and as such no 'total' cumulative effects arising from all projects combined are anticipated.</p>
Viewpoint 7 – ProW near Little Bromley Hall	Medium	<p><b><u>'Additional' effects of North Falls in a theoretical future baseline</u></b></p> <p>In a theoretical future cumulative baseline, which assumes the substations for East Anglia GREEN and Five Estuaries are operational, the proposed North Falls onshore substation will be seen in this context.</p> <p>Intervening tree cover will provide a level of screening. In this altered baseline context, and due to viewing distance, and as the substations will be grouped together (when visible) in the view and partially screened by intervening vegetation, no significant additional cumulative visual effects are predicted. In this context, the additional scale of cumulative change will be small. Additional cumulative effects will be minor adverse, which is not significant in EIA terms.</p> <p>No significant visual effects have been identified in the primary visual assessment from this viewpoint, and as such no 'total' cumulative effects arising from all projects combined are anticipated.</p>

### 30.8 Potential monitoring requirements

107. Details of long term monitoring of the landscape mitigation will be set out in the OLEMS, which will be produced at the ES stage.

### 30.9 Interactions

108. The effects identified and assessed in this chapter have the potential to interact with each other, which could give rise to synergistic effects as a result of that interaction. Potential interactions exist between landscape and visual receptors, and receptors as identified in the following other technical chapters, as set out in Table 30.24 below.

**Table 30.24 LVIA interactions**

Linked Chapter	Rationale	Section where addressed
Chapter 22 Land Use and Agriculture (Volume I)	Both chapters consider the effects of the loss of farmland (as a landscape element or an agricultural asset).	Refer to landscape and visual receptors assessment in Section 30.6
Chapter 23 Onshore Ecology (Volume I)	Both chapters consider the effects of vegetation loss, including hedgerows and trees (as a landscape element or an ecological asset). Both chapters consider the mitigation of hedgerow and tree loss.	Refer to landscape and visual receptors assessment in Section 30.6 and summary of mitigation as set out in Table 30.3.
Chapter 29 SLVIA (Volume I)	Potential overlap between offshore and onshore seascape, landscape and visual effects, discussed further below.	Refer to landscape and visual receptors assessment in Section 30.6.
Chapter 32 Tourism and Recreation (Volume I)	Both chapters consider effects on recreational receptors.	Refer to visual receptors in Section 30.6.

109. With regard to interactions between seascape, landscape and visual effects identified in Chapter 29 SLVIA (Volume I) and this chapter, visibility of the North Falls array area and the onshore substation or landfall, from a particular viewpoint or landscape receptor, may interact to produce a different, or greater effect on a receptor than when effects are considered in isolation.
110. During construction of the offshore turbines and the onshore export cable at the landfall (between Frinton-on-Sea and Clacton-on-Sea) there may be a short period where views associated with the construction of both project components will be available. However, this would be from a very localised area. Due to the viewing distance (>30km), effects associated with the offshore turbines are judged to fall below the threshold of significance. Furthermore, these effects would be temporary and transitory in nature. As such, the potential for significant inter-relationship effects, during the construction (and decommissioning phase) phase, is unlikely.
111. During operation, due to the location of the key visible components (offshore turbines/ offshore substation platforms and the onshore substation) the

potential for combined and successive views is not possible as the onshore substation is approximately 20km inland. No locations have been identified where both views of the offshore turbines and inland views to the onshore substation zone are available. As such, there is no potential for any interaction effects during the operational phase.

### 30.10 Inter-relationships

112. The effects identified and assessed in this chapter have the potential to interrelate with each other. Operational and construction stage, landscape and visual effects will be experienced individually, at different points in time. As such, inter-relationships between construction and operational landscape and visual effects are not predicted.

113. The areas of potential interrelationship are set out in Table 30.25 below.

**Table 30.25 Inter-relationships between impacts**

Potential interaction between impacts				
Construction and Operation				
	Changes to landscape elements/ fabric	Changes to landscape character	Changes to landscape designations	Changes to visual amenity
Changes to landscape elements/ fabric	-	Yes	N/a	Yes
Changes to landscape character	Yes	-	N/A	Yes
Changes to landscape designations	N/A	N/A	-	N/A
Changes to visual amenity	Yes	Yes	N/A	-
Construction and Operation				
Localised and significant effects have been identified on landscape character, and from some certain closer proximity viewpoints. Where significant effects on landscape character (during construction and operation) have been identified it is likely that significant visual effects will also be experienced. However, whilst effects on landscape and visual amenity are interlinked, they are assessed separately as effects on landscape character concern effects on landscape as a resource, and effects on visual amenity concern effects on views, as experienced by people. There would be no additional impacts as a result of the inter-relationships identified within this table.				

### 30.11 Summary

114. The assessment concludes that there will be no significant effects on designated landscapes, including AONB designations.

115. In terms of landscape effects, there will be significant (moderate) effects of the landscape fabric of the onshore substation zone during the construction and operational stage of the Project. The construction of the substation within the



onshore substation zone will change the character from open arable fields to a construction site and subsequently an operational substation.

116. In terms of effects on landscape character, there will be no effects beyond the site level in which the proposed substation is located (7A Heathland Plateaux – Bromley Heaths). There will be no significant effects on landscape character on any of the LCAs which the proposed onshore export cables pass through. Construction and operational effects associated with the proposed substation will be very localised. The flat nature of the landscape and woodland and hedgerow cover limits the potential for wider effects on landscape character. Construction effects associated with the onshore export cables will also be very localised and transient in nature. Once operational, landscape effects associated with an underground cable are not judged to be significant.
117. In terms of visual effects, significant visual effects are predicted from the following viewpoints, during the construction and operational phase:
  - VP2 - Bridleway at Barn Lane (moderate);
  - VP3 - Norman's Farm (major);
  - VP4 - Little Bromley Road to west (moderate); and
  - VP5 - PRow near Lilley's Farm (moderate).
118. All of these viewpoints represent higher sensitivity residential or recreational receptors and are contained within 1km of the proposed substation.
119. Table 30.26 provides a summary of the LVIA findings.

**Table 30.26 Summary of potential likely significant effects on LVIA**

Potential impact	Receptor	Sensitivity	Magnitude of impact	Pre-mitigation effect (including embedded mitigation)	Additional Mitigation measures proposed	Residual effect
<b>Construction</b>						
Effects on Landscape Fabric	Landscape Impacts on the onshore substation zone	Medium-Low	High	Moderate adverse	Mitigation measures during the construction phase are set out in Table 30.3 as embedded mitigation, therefore, no additional landscape and visual construction stage mitigation measures are proposed.	Moderate adverse
Effects on Landscape Character	7A Heathland Plateaux – Bromley Heaths Landscape Character Area	Medium-Low	Low locally (outside the onshore substation zone boundary), and negligible for the LCA as a whole	Minor adverse		Minor adverse
Effects on Landscape Character	2C – Holland Haven Drained Estuarine/ Coastal Marsh	Medium-High	Low	Minor adverse		Minor adverse
Effects on Landscape Character	3D – Holland Coastal Slopes	Medium	Low	Minor adverse		Minor adverse
Effects on Landscape Character	8B – Clacton and the Sokens Clay Plateau	Medium-Low	Low	Minor adverse		Minor adverse

Potential impact	Receptor	Sensitivity	Magnitude of impact	Pre-mitigation effect (including embedded mitigation)	Additional Mitigation measures proposed	Residual effect
Effects on Landscape Character	3A – Hamford Coastal Slopes	Medium	Low	Minor adverse		Minor adverse
Effects on Landscape Character	8A – Tendring and Wix Clay Plateau	Medium-Low	Low	Minor adverse		Minor adverse
Effects on Landscape Character	6D – Holland Valley System (Clay Valleys)	Medium-High	Low	Minor adverse		Minor adverse
Effects on Views	VP1 - Court Farm, Stutton Road	High	Negligible	Negligible		Negligible
Effects on Views	VP2 - Bridleway at Barn Lane	Medium	Medium	Moderate adverse		Moderate adverse
Effects on Views	VP3 - Norman's Farm	Medium-High	High	Major adverse		Major adverse
Effects on Views	VP4 - Little Bromley Road to west	Medium-Low	Medium	Moderate adverse		Moderate adverse
Effects on Views	VP5 - PRoW near Lilley's Farm	Medium	Medium	Moderate adverse		Moderate adverse
Effects on Views	VP6 - Grange Road to north	Medium	Low	Minor adverse		Minor adverse

Potential impact	Receptor	Sensitivity	Magnitude of impact	Pre-mitigation effect (including embedded mitigation)	Additional Mitigation measures proposed	Residual effect
Effects on Views	VP7 - PRoW near Little Bromley Hall	Medium	Medium-Low	Minor adverse		Minor adverse
<b>Operation (Year 1)</b>						
Effects on Landscape Fabric	Landscape Impacts on the onshore substation zone	Medium-Low	High	Moderate adverse	Landscape and visual mitigation is discussed in the Design Vision Document (North Falls, 2023).	Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
Effects on Landscape Character	7A Heathland Plateaux – Bromley Heaths Landscape Character Area	Medium-Low	Low locally (outside the onshore substation zone boundary), and negligible for the LCA as a whole	Minor adverse		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
Effects on Landscape Character	2C – Holland Haven Drained Estuarine/ Coastal Marsh	Medium-High	Negligible	Negligible		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.

Potential impact	Receptor	Sensitivity	Magnitude of impact	Pre-mitigation effect (including embedded mitigation)	Additional Mitigation measures proposed	Residual effect
Effects on Landscape Character	3D – Holland Coastal Slopes	Medium	Negligible	Negligible		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
Effects on Landscape Character	8B – Clacton and the Sokens Clay Plateau	Medium-Low	Negligible	Negligible		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
Effects on Landscape Character	3A – Hamford Coastal Slopes	Medium	Negligible	Negligible		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
Effects on Landscape Character	8A – Tendring and Wix Clay Plateau	Medium-Low	Negligible	Negligible		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape

Potential impact	Receptor	Sensitivity	Magnitude of impact	Pre-mitigation effect (including embedded mitigation)	Additional Mitigation measures proposed	Residual effect
						mitigation and detailed assessment of year 15 residual effects.
Effects on Landscape Character	6D – Holland Valley System (Clay Valleys)	Medium-High	Negligible	Negligible		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
Effects on Views	VP1 - Court Farm, Stutton Road	High	Negligible	Negligible		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
Effects on Views	VP2 - Bridleway at Barn Lane	Medium	Medium	Moderate adverse		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.

Potential impact	Receptor	Sensitivity	Magnitude of impact	Pre-mitigation effect (including embedded mitigation)	Additional Mitigation measures proposed	Residual effect
Effects on Views	VP3 - Norman's Farm	Medium-High	High	Major adverse		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
Effects on Views	VP4 - Little Bromley Road to west	Medium-Low	Medium	Moderate adverse		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
Effects on Views	VP5 - PRoW near Lilley's Farm	Medium	Medium	Moderate adverse		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
Effects on Views	VP6 - Grange Road to north	Medium	Low	Minor adverse		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape

Potential impact	Receptor	Sensitivity	Magnitude of impact	Pre-mitigation effect (including embedded mitigation)	Additional Mitigation measures proposed	Residual effect
						mitigation and detailed assessment of year 15 residual effects.
Effects on Views	VP7 - PRoW near Little Bromley Hall	Medium	Medium-Low	Minor adverse		Residual (year 15) effect are discussed at Section 30.6.6. The ES will include further detail on the proposed landscape mitigation and detailed assessment of year 15 residual effects.
<b>Decommissioning</b>						
<p>No decision has been made regarding the final decommissioning policies for North Falls as it is recognised that industry best practice, rules and legislation change over time. The detail and scope of decommissioning works would be determined by the relevant legislation and guidance at the time of decommissioning and would be agreed with the regulator with a Decommissioning Programme provided.</p> <p>However, it is considered likely that the proposed onshore substation would be removed and would be reused or recycled and that the onshore cables would be removed and recycled, with the landfall transition joint bays and cable ducts (where used) left in situ. For the purposes of a worst-case scenario, it is considered that the impacts associated with the decommissioning phase would be no greater than those identified for the construction phase.</p>						



## 30.12 References

Overarching National Policy Statements for Energy (NPS EN1 July 2011)
National Policy Statements for Renewable Energy Infrastructure (NPS EN-3 July 2011)
National Policy Statements for Electricity Infrastructure (NPS EN-5 July 2011)
North Falls (2023). Design Vision (Ecodoc reference 004577036-04)
Landscape Institute and IEMA (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)
Natural England (2014). An Approach to Landscape Character Assessment
Landscape Institute (2021). Assessing the Value of Landscapes outside National Designations, The Technical Guidance Note (TGN) 02-21
Scottish Natural Heritage (SNH, now NatureScot) (2021). Assessing the cumulative impact of onshore wind energy developments (first published in 2012)
Landscape Institute (2019). Visual representation of Development Proposals, Technical Guidance Note 06/19
Natural England (2014). National Character Area Profiles
Suffolk Coast and Heaths AONB. Suffolk Coast and Heaths Area of Outstanding Natural Beauty Management Plan 2018 -2023
LUC (2001). Tendring District Landscape Character Assessment
Tendring District Council (2021) Tendring District Local Plan 2013-2033 and Beyond