NORTH FALLS

Offshore Wind Farm

ENVIRONMENTAL STATEMENT

Chapter 30 Landscape and Visual Impact Assessment

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Glossary of Acronyms

AIS	Air-Insulated Switchgear
AOD	Above Ordnance Datum
CEA	Cumulative Effects Assessment
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
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
GLVIA3	Guidelines for Landscape and Visual Impact Assessment, Third Edition
HDD	Horizontal directional drilling
IEMA	Institute of Environmental Management and Assessment
JNCC	Joint Nature Conservation Committee
LCT/A	Landscape Character Type/ Area
LUC	Land Use Consultants (Limited)
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
RWE	RWE Renewables UK Swindon Limited
SLVIA	Seascape, Landscape and Visual Impact Assessment
SSER	SSE Renewables Offshore Windfarm Holdings Limited
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 export cables ashore at landfall. The technique will also be the primary trenchless technique 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 at Kirby Brook.
Link boxes	Underground chambers or above ground cabinets next to the onshore export cables housing low voltage electrical earthing links.
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 route	Onshore route within which the onshore export cables and associated infrastructure would be located.
Onshore project area	The boundary within which all onshore infrastructure required for the Project will be located (i.e. landfall; onshore cable route, accesses, construction compounds; onshore substation and cables to the National Grid substation)
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 works area	Area within which all temporary and permanent works associated within the onshore substation are located, including onshore substation, construction compound, access, landscaping, drainage and earthworks.
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.
Temporary construction compound	Area set aside to facilitate construction of the onshore cable route. Will be located adjacent to the onshore cable route, with access to the highway where required.
Trenchless crossing compound	Areas within the onshore cable route 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 Environmental Statement (ES) 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). The assessment was 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 ES Appendix 29.1 Seascape, Landscape, Visual Impact Assessment (SLVIA) and Visualisation Methodology (Document Reference: 3.3.69).

3. The assessment should be read in conjunction with following ES chapters (Volume 3.1):

   - ES Chapter 4 Site Selection and Assessment of Alternatives (Document Reference: 3.1.6);
   - ES Chapter 5 Project Description (Document Reference: 3.1.7);
   - ES Chapter 22 Land Use and Agriculture (Document Reference: 3.1.24);
   - ES Chapter 23 Onshore Ecology (Document Reference: 3.1.25);
   - ES Chapter 25 Onshore Archaeology and Cultural Heritage (Document Reference: 3.1.27); and
   - ES Chapter 29 Offshore Seascape, Landscape and Visual Impact Assessment (Document Reference: 3.1.31).

30.2 Consultation

4. Consultation with regard to LVIA has been undertaken in line with the general process described in ES Chapter 6 EIA Methodology (Document Reference: 3.1.8). The key elements to date have included scoping, feedback on the Preliminary Environmental Information Report (PEIR) and the ongoing technical consultation via the Expert Topic Group (ETG).

5. The feedback received has been considered in preparing the ES. Table 30.1 collates this feedback and provides a summary of how the consultation responses have influenced the approach that has been taken.

6. This chapter has been updated following the consultation on the PEIR in order to produce the final assessment. Full details of the consultation process are also presented in the Consultation Report (Document Reference: 4.1), provided as part of the Development Consent Order (DCO) application.

Table 30.1 Consultation responses

Consultee	Date/ Document	Comment	Response/ where addressed in the ES
Planning Inspectorate	Scoping Opinion (August 2021)	Potential impacts on designated landscapes: "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."	Due to the refinement of the onshore scoping area; the further detail developed around the siting of the onshore substation works area; the distance; and limited nature of actual visibility (verified through field work), effects on the Suffolk and Essex Coast and Heaths National Landscape (an Area of Outstanding Natural Beauty (AONB)), as well as the Heritage Coast and Dedham Vale National Landscape 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: "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."	Since Scoping, it has become clear that other substations are proposed close to the North Falls Onshore Substation. Cumulative effects are considered in Section 30.8 of this assessment.

Consultee	Date/ Document	Comment	Response/ where addressed in the ES
Planning Inspectorate	Scoping Opinion (August 2021)	Mitigation: "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.	Principles for mitigation associated with the North Falls onshore substation are set out in the Design Vision (Document Reference: 2.3) and the Outline Landscape and Ecological Management Strategy (OLEMS). 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.
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 follows the methodology for the SLVIA. This was submitted in a detailed note to stakeholders in May 2021. The methodology is presented in ES Appendix 29.1 (Document Reference: 3.3.69).
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 GLIVIA3 and the assessment of value (GLIVIA3 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 additional factors that should be taken into consideration when assessing value.	The methodology presented in ES Appendix 29.1 (Document Reference: 3.3.69) details how landscape value has been evaluated, with reference to this technical guidance note.
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 Tendring Landscape Character Assessment (LUC, 2001) has been used as the baseline for landscape character, as it covers the full extent of the LVIA study area. The Landscape Character Assessment of the Essex Coast has also been referenced where appropriate for additional detail on coastal landscapes.

Consultee	Date/ Document	Comment	Response/ where addressed in the ES
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.	The principles guiding landscape mitigation are developed in the Design Vision (Document Reference: 2.3) and included in the OLEMS (Document Reference: 7.14). ES Figure 30.1.6 (Document Reference: 3.2.26) illustrates the landscape mitigation plan for the onshore substation works area, including screen planting.
Essex County Council	Scoping Opinion (August 2021)	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 as identified in Table 3.32 when assessing the impacts of the scheme on these topics and their relationship with onshore built heritage.	Interactions with other topic areas are considered in Section 30.9 of the LVIA.
Essex County Council	Scoping Opinion (August 2021)	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 and are included in Table 30.12.
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 30.8.

Consultee	Date/ Document	Comment	Response/ where addressed in the ES
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 works area confirmed. Tendring District Council requested inclusion of an additional viewpoint, to north of the onshore substation works area, to consider effects in the vicinity of Grange Road.	Viewpoint from Grange Road is included (Viewpoint 6), refer to Table 30.12 and Section 30.6.
Essex County Council	PEIR Consultation Response 14/07/23	Effects on woodland/ trees: "As per our previous comments, we would advise that an Arboricultural survey and impact assessment should be undertaken to understand the quality of trees in the study area and proposed impacts on them. The assessment should also identify any ancient woodland or veteran trees that could pose a constraint on the scheme. This assessment should be undertaken in accordance with British Standard 5837:2012 'Trees in relation to design demolition and construction – Recommendations' and should provide details on trees and shrubs to be retained and/or removed, the impact on them and any constraints."	The Project is seeking to minimise removal of mature trees / woodland where practicable. There is a commitment to microsite the cable trenches around mature trees where practicable to avoid the need for replacement tree planting along the onshore cable route. Hedgerows affected by the onshore cable will also be replanted. The detailed design will be informed by an arboricultural survey to be carried out post-consent, as set out in the OLEMS (Document Reference: 7.14).
Essex County Council	PEIR Consultation Response 14/07/23	Effects on Dedham Vale National Landscape (an AONB): "Paragraph 55 re: Impact on AONB - It is stated that '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.' The polytunnels could well be transitory in the current economic climate and ZTV does show theoretical visibility beyond the 2km marker, therefore it is suggested that the AONB is scoped in."	Effects on the National Landscape have been reconsidered against the current substation proposals (refer to Section 30.5.3).
Essex County Council	PEIR Consultation Response 14/07/23	Cable corridor viewpoints: "Paragraph 65 - It is stated that 'potential visual receptors (including visual receptors along the cable corridor(s))…' However, the only visual impact assessment viewpoints are close to the	Viewpoints along the onshore cable route have not been included in the LVIA. Landscape and visual impacts along the onshore cable route will only arise from construction works, which are transitory in nature and localised in extent. Effects are discussed in relation to receptor groups along the onshore cable route,

Consultee	Date/ Document	Comment	Response/ where addressed in the ES
		substation zone not the cable corridor. Will the cabling works have such a small impact on the visual amenity of the cable corridor? I would suggest some indicative VPs are needed along the cabling route especially where the cable comes ashore and where it runs through more sensitive landscapes such as Holland Haven and if crossing any water bodies/systems."	but without reference to fixed viewpoints. Refer to Section 30.6.5. The onshore cable route will be re-instated following construction (hedgerows will be reinstated). The Project is seeking to minimise removal of mature trees / woodland. Effects relating to smaller pieces of above ground infrastructure (link boxes) present during operation will be very localised so that no likely significant effects would occur.
Natural England	PEIR Consultation Response 14/07/23	Cumulative Effects: "We have concluded that, at this stage, the risk of significant adverse impacts occurring within both the Dedham Vale AONB and SCHAONB from the North Falls OWF substation delivered in isolation (of other projects), is low. However, we are conscious that there is the potential for co-location of the North Falls onshore substation with those of Five Estuaries OWF and the National Grid Norwich to Tilbury Project. Whilst there is a lack of information at present to enable us to carry out a fully informed assessment of potential cumulative landscape and visual impacts; we advise that as more details become available regarding these other projects, this should be reflected in the impact assessment presented in the ES. Furthermore, as advised above, opportunities should be sought to work collaboratively with these (and any other relevant) plans/projects, to minimise impacts and to futureproof the Application through Examination."	The cumulative assessment (refer to Section 30.8) considers the above ground (operational stage) features including the proposed Five Estuaries Offshore Wind Farm ('Five Estuaries') and National Grid Electricity Transmission (NGET) (Norwich to Tilbury Project) Substations, plus other relevant features in the LVIA study area. As more information on these projects is now available, a more detailed cumulative assessment is presented in Section 30.8.
LVIA Expert Topic Group	Meeting 19/09/2023	Welcomed coordinated approach with Five Estuaries and National Grid. Design of substation should seek to minimize height. Bunding and screen planting should be included in the design. Highlighted available guidance documents on use of colour and lighting design.	Details of the substation are set out in Table 30.2. Design will be further developed post-consent in line with the Design Vision (Document Reference: 2.3). A landscape mitigation plan is presented in ES Figure 30.1.6 (Document Reference: 3.2.26). Lighting and colour guidance documents have been referenced within this chapter and within the Design Vision.
LVIA Expert Topic Group	Meeting 27/02/2024	Clarification required on impact of Bentley Road improvement works. Confirmation sought that the cumulative assessment will include the overhead lines forming part of the National Grid Norwich to	Impacts of the Bentley Road improvement works are set out in Section 30.6.4 (landscape effects) and 30.6.5 (visual effects). Cumulative effects of overhead lines are considered in Section 30.8.

Consultee	Date/ Document	Comment	Response/ where addressed in the ES
		Tilbury project, as well as the substation. The LVIA should distinguish between planting required as compensation, mitigation and enhancement.	Details of compensation and mitigation are presented in the assessment as appropriate, see Section 30.6. Enhancement proposals are discussed in the Design Vision (Document Reference: 2.3).

30.3 Scope

30.3.1 Study area

7. The LVIA study area has been defined as a 500m radius around the onshore project area, combined with a 2km radius around the North Falls onshore substation compound. The 2km study area around the onshore substation is based on consideration of the maximum height of the onshore substation (13m equipment height, 18m lightning masts) and nature of the landscape (flatter landscape with hedgerows and areas of woodland which combine to limit visibility in distances over 2km). The smaller study area around the other parts of the onshore project area (onshore cable route and landfall) are based on the nature of the construction works. The location of the LVIA study area is shown on ES Figure 30.1.1a-b (Document Reference: 3.2.26).

8. To consider the wider cumulative effects of the North Falls onshore substation in relation to other schemes in the wider area, Table 30.29 sets out which projects have been considered. Projects considered in the cumulative assessment are also shown on ES Figure 30.1.5 (Document Reference: 3.2.26).

9. The North Falls and Five Estuaries projects are working together to develop plans for a co-located onshore substation site (refer to ES Figure 30.1.5 (Document Reference: 3.2.26)). As such, the cumulative assessment includes consideration of the North Falls onshore substation in this context.

10. A Zone of Theoretical Visibility (ZTV) map was generated, illustrating areas from where the onshore substation may be visible across the study area. The ZTV was based on a digital surface model (DSM) which takes account of potential screening by vegetation or buildings. In some cases, a DSM can over estimate screening by treating visually permeable objects, such as trees, as solid. The DSM used is LIDAR 1m (2022). The ZTV is used as a tool for understanding where there is potential visibility of the onshore substation, it is not a substitute for on-site observation and professional assessment. 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 ES Figure 30.1.2 (Document Reference: 3.2.26).

11. The ZTV is based on a 3D model of an indicative layout for an air-insulated switchgear (AIS) substation. AIS is the selected technology for provision of the North Falls onshore substation. The overall footprint of the substation is 280m by 210m and the tallest components are lightning masts at 18m, and electrical switchgear at up to 13m.

30.3.2 Realistic worst case scenarios

12. 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 likely significant 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 ES Chapter 6 EIA Methodology (Document Reference: 3.1.8).

13. The realistic worst case scenarios for the likely significant effects scoped into the EIA for the landscape and visual impact assessment are summarised in the following tables. These are based on Project parameters described in ES Chapter 5 Project Description (Document Reference: 3.1.7), which provides further details regarding specific scenarios, activities and their durations.

14. The grid connection options considered in the ES are outlined below:

- Option 1: Onshore electrical connection at a national grid connection point within the Tendring peninsula of Essex, with a project alone onshore cable route and onshore substation infrastructure;
- Option 2: Onshore electrical connection at a national grid connection point within the Tendring peninsula of Essex, sharing an onshore cable route and onshore duct installation (but with separate onshore export cables) and co-locating separate project onshore substation infrastructure with Five Estuaries; or
- Option 3: Offshore electrical connection, supplied by a third party.

15. Table 30.2 covers realistic worst-case scenarios relating to effects arising from development of North Falls. Grid connection Option 2 is considered the realistic worst case scenario for the landscape and visual impact assessment because the build out requires additional temporary construction effects arising from the build out of four sets of cable ducts and associated infrastructure.

16. Under Option 2, the Project's onshore infrastructure comprises the following elements:

- Landfall, where the offshore export cables are brought ashore;
- Onshore cable route, which includes space for temporary works for the installation of cable ducts and buried onshore export cables, including areas for temporary construction compounds (TCCs), construction and operation and maintenance accesses (including Bentley Road improvement works);
- Onshore substation, proposed to be located west of Little Bromley;
- Onshore substation works area, which includes land required for temporary construction, export cables, means of access, drainage, landscaping and environmental mitigation for the onshore substation;

- The search area for the East Anglia Connection Node (EACN) (the Project's national grid connection point), within which will be located the Project's national grid substation connection works.

17. Collectively, the footprint of the Project's onshore infrastructure is referred to herein as the 'onshore project area', and is shown on ES Figure 5.2 (Document Reference: 3.2.3). The Project's onshore infrastructure outlined above is proposed to be located entirely within the Tendring peninsula of Essex.

Table 30.2 Realistic worst-case scenarios (effects arising from development of North Falls – Option 2 (Installation of ducts for a second project))

Element of the Project infrastructure	Parameter	Notes
Construction		
Impacts relating to the landfall	Landfall HDD (temporary works) physical parameters: • Maximum no. of Transition Joint Bays (TJB) = 2 • Individual TJB dimensions / permanent land take = 4 x 15m • Maximum indicative length of HDD = 1.1 km • HDD temporary works area = 75 x 150m • Drill exit location = subtidal exit below MHWS (up to 8m depth)	Duration includes compound establishment, HDD, transition bays, and reinstatement.
	Duration: • 13 months (of which HDD = 6 months) • HDD to include 24 hour / 7 days working where required	
Impacts relating to the onshore cable route	Cable route construction physical parameters: • Approximate onshore export cable length= 24km • Jointing bays = Up to 192 (approximately every 500m) buried below ground • Joint bay dimensions = 4 x 15m • Maximum cable route working width = 72m (open cut trenching), 90m (trenchless crossings), 130m (complex trenchless crossings) • Cable construction compound dimensions = 150 x 150m (main) to 100 x 100m (satellite) • Number of temporary construction compounds (est.) = 11 • No. of trenches = 4 • Cable trench dimensions = 3.75 – 1.2 x 2m (tapered top to bottom)	Overall duration includes establishing / reinstating TCCs and haul roads, cable installation (trench excavation, duct installation, cable jointing), trenchless crossings (includes compound establishment, trenchless crossings, and reinstatement).

Element of the Project infrastructure	Parameter	Notes
	• Haul road width = 6m wide road, (up to 10m wide total including verges, drainage and passing places). • Haul road spacing of passing places = 500m • Hedge replanting restrictions = shrubs max 5m high within 6m of each cable centre i.e. 37m swathe in which only shrubs can be planted. • Bentley Road improvement works – improvements to the turn-off from the A120; widening of the permanent road to 6.5m; creation of a temporary off-road cycling and walking route.	
	Trenchless crossings physical parameters: • Maximum cable route working width = 90m (shallow trenchless crossings), 130m (complex/deeper trenchless crossings) • Trenchless crossing compound dimensions = 75 x 150m	

	Durations:
	• Bentley Road improvement works = 6 – 9 months
	  ○ Cable route works = 18 – 27 months, including:
	  ○ Cable installation = 12 months
	• Major trenchless crossing (each location) = 8 months (of which HDD = 4 months)
	• Minor trenchless crossing crossings = 2 months
	• Major trenchless crossing crossings to include 24 hour / 7 days working where required.	

Impacts relating to the onshore substation and unlicensed works	Onshore substation (temporary works) physical parameters: • Indicative area of the AIS substation = 280 x 210m	-

Element of the Project infrastructure	Parameter	Notes
	• Construction compound footprint = 250 x 150m • Unlicensed works physical parameters: • All enabling works / platform constructed by national grid. • Cable installation works as described above	
	Duration: • Onshore substation construction duration = 21 – 27 months.	
Impacts relating to the 400kV connection to the NGET substation	400kV cable installation, from the onshore substation to the adjacent national grid connection point: • No. of cable circuits = 2 • No. of crossings = 2 • Cable installation works as described above.	-
Operation		
Impacts relating to the onshore cable route	Cable route operational physical parameters: • No. of link boxes = up to 96 • Link box footprint (per box) = 0.6 x 1 x 1.5m • Operation and maintenance access will be via existing roads that will not be altered	-
Impacts relating to the onshore substation	Onshore substation physical parameters: • Maximum structure height = 18m (lightning rods) • Maximum equipment height = 13m (switchgear) • Maximum building height = 7m • Permanent substation footprint = 280 x 210m	Normal operating conditions would not require lighting at the onshore substation, although low level movement detecting security lighting may be utilised for health and safety purposes. Temporary lighting during working hours would be provided during maintenance activities only. Low level continuous noise emissions would also be generated by the onshore substation during operation.
Decommissioning		

Element of the Project infrastructure	Parameter	Notes
No final decision has yet been made regarding the final decommissioning policy for the onshore Project infrastructure including landfall, onshore cable route, 400kV cable route and onshore substation. It is also recognised that legislation and industry good practice change over time. However, it is likely that the onshore Project equipment, including the cable, will be removed, reused, or recycled where practicable 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.		

30.3.3 Summary of mitigation embedded in the design

18. 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).

19. Committed landscape mitigation and biodiversity enhancement principles, which include new hedgerow and woodland planting, are described in the Design Vision (Document Reference: 2.3). This document also includes details on likely plant species, specifications and provides details on planting areas through a Landscape Mitigation Plan (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)). The intention of the proposed landscape treatment is to help to integrate the onshore substation into the existing landscape of arable fields, woodlands, boundary trees and hedgerows. As this planting establishes and matures it will offer enhanced screening of the proposed North Falls onshore substation.

20. The Landscape Mitigation Plan (ES Figure 30.1.6 (Document Reference: 3.2.26)) is considered to be embedded mitigation. However, it is recognised that mitigation planting will not be fully effective until plants begin to grow and mature. The LVIA therefore reports on effects at year 1 following completion, when the effectiveness of planting will be least. This represents a worst case assessment. The LVIA also reports on effects at year 15, assuming that planting has matured by this time and is more effective in mitigating the effects. This assessment is the residual effect.

Table 30.3 Embedded mitigation measures

Parameter	Mitigation measures embedded into North Falls design
Mitigation by site selection	The onshore project area and onshore substation works area 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 Project location. The site selection process is described in detail in ES Chapter 4 Site Selection and Assessment of Alternatives (Document Reference: 3.1.6). The site selection process has included consideration of the following landscape and visual criteria as part of the process: • Baseline landscape character and landscape susceptibility to change; • Landscape designations; • Principal visual receptors; and • Physical suitability of the site and potential for mitigation.
Mitigation by construction method selection	North Falls has committed to seeking to use trenchless techniques (e.g. HDD) where practicable at all key sensitive linear features, including: • All 'important' hedgerows, and those hedgerows potentially suitable for supporting dormice and/or commuting / foraging bats; • Main Rivers and watercourses potentially suitable for supporting water voles / otters; • Veteran trees; • Woodland UK Habitat of Principal Importance (UKHPI); • Ponds UKHPI. 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 ES Chapter 5 Project Description (Document Reference: 3.1.7), ES Appendix 5.1 Crossing Schedule (Document Reference: 3.3.2).

Parameter	Mitigation measures embedded into North Falls design
Mitigation by construction method – hedges	North Falls Offshore Wind Farm Limited (NFOW) is a joint venture between SSE Renewables Offshore Windfarm Holdings Limited (SSER) and RWE Renewables UK Swindon Limited (RWE). NFOW have committed to reduce the onshore cable route working width to 30m 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 onshore cable route working width at hedgerow crossings. Hedgerows will be replanted following construction but note that canopy tree species cannot be replanted within 6m of the buried cables. This will restrict tree planting for a 37m swathe during hedgerow reinstatement. Locations for replacement tree planting will be identified prior to construction. Hedgerow planting would be undertaken in the first winter season following construction.
Landscape and habitat reinstatement	All habitats subject to temporary disturbance during construction, will be reinstated in full following the completion of construction. The specific details of the reinstatement for each habitat will be set out within an Ecological Management Plan. This will be developed post-consent in line with the OLEMS (Document Reference: 7.14). The following core principles for habitat reinstatement are included within the OLEMS: **Grassland habitats** • 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. • Where practicable, harvesting a green hay crop from the grassland areas being lost will be carried out, for use as seed on the reinstatement and compensation areas. Where practicable the salvage of turves from grasslands areas being lost will be carried out for re-use on the reinstatement and compensation areas. **Trees and hedgerows** • 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. • 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. • All reinstated hedgerows will be replanted using locally important and native species, as advised by Essex Wildlife Trust. Pre-planting will be carried out where practicable so hedgerows and trees can establish as close as possible to the time of initial habitat loss. **Arable field margins** Efforts will be made to reinstate this habitat, 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), 2008f): • Cultivated, low-input margins (land managed specifically to create habitat for annual arable plants); • 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); • Margins sown with wildflowers or agricultural legumes and managed to allow flowering to provide pollen and nectar resources for invertebrates; • Margins providing permanent, grass strips with mixtures of tussocky and fine-leaved grasses.

Parameter	Mitigation measures embedded into North Falls design
	The precise nature of the reinstatement will be based on agreement with landowners made post-consent and detailed in the final Environmental Management Plan (EMP).
Mitigation through detailed design	Mitigation of landscape and visual effects has been undertaken through design modifications and input to the design process. A Design Vision (Document Reference: 2.3) has been developed which sets out principles that will guide the detailed design process post-consent. This was presented at PEIR, and has been further developed in response to input from the Design Council. The Design Vision will ensure that good design is embedded within the approach to the Project post consent.

30.4 Assessment methodology

30.4.1 Legislation, guidance and policy

30.4.1.1 National Policy Statements

21. The assessment of likely significant effects upon landscape and visual amenity has been made with specific reference to the relevant legislation and guidance, of which the principal policy documents with respect to the Nationally Significant Infrastructure Projects (NSIPs) are the National Policy Statements (NPS). Those relevant to the Project are:

- Overarching NPS for Energy (EN-1) (Department for Energy security and Net Zero (DESNZ), 2023a);
- NPS for Renewable Energy Infrastructure (EN-3) (DESNZ, 2023b); and
- NPS for Electricity Networks Infrastructure (EN-5) (DESNZ, 2023c).

22. 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 ES chapter where each is addressed.

Table 30.4 NPS assessment requirements

NPS Requirement	NPS Reference	ES Reference
Overarching NPS for Energy (EN-1)		
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 5.10.17	Baseline landscape character and seascape assessments referenced in Section 30.5. Relevant local development documents, referred to in the assessment, (as listed in Paragraph 23).
The assessment should Include the effects on landscape components and character during construction and operation.	Paragraph 5.10.20	Refer to Section 30.6 for construction and operational effects on the landscape.
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 5.10.21	Refer to Section 30.6 for construction and operational effects on visual amenity.

NPS Requirement	NPS Reference	ES Reference
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 5.10.24	Refer to Design Vision (Document Reference: 2.3) and the Landscape Mitigation Plan (ES Figure 30.1.6 (Document Reference: 3.2.26)).
Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within its development site and wider setting. The careful consideration of colours and materials will support the delivery of a well-designed scheme, as will sympathetic landscaping and management of its immediate surroundings	Paragraph 5.10.27	Refer to Design Vision (Document Reference: 2.3).
The Secretary of State should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape, including by appropriate mitigation.	Paragraph 5.10.37	Refer to Design Vision (Document Reference: 2.3) and the Landscape Mitigation Plan (ES Figure 30.1.6 (Document Reference: 3.2.26)). The effects of the Project are set out in Section 30.6.
NPS for Renewable Energy Infrastructure (EN-3)		
Proposals for renewable energy infrastructure should demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-existence/co-location with other marine and terrestrial uses, and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage.	Paragraph 2.5.2	Refer to Design Vision (Document Reference: 2.3) and the Landscape Mitigation Plan (ES Figure 30.1.6 (Document Reference: 3.2.26)).
NPS for Electricity Networks Infrastructure (EN-5)		
New substations, sealing end compounds (including terminal towers), and other above-ground installations that serve as connection, switching, and voltage transformation points on the electricity network may also give rise to adverse landscape and visual impacts. Cumulative adverse landscape, seascape and visual impacts may arise where new overhead lines are required along with other related developments such as substations, wind farms, and/or other new sources of generation.	Paragraph 2.9.9 and 2.9.10	The likely significant effects of the onshore substation and cumulative interactions with similar schemes, in the LVIA study area, have been assessed in Section 30.7.

30.4.1.2 Other legislation, policy and guidance

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

- Landscape Institute and Institute of Environmental Management and Assessment (IEMA) (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3);
- Landscape Institute (2021). Assessing the Value of Landscapes outside National Designations, The Technical Guidance Note (TGN) 02-21;

- Landscape Institute (2019). Visual representation of Development Proposals, Technical Guidance Note 06/19.
- Natural England (2014). An Approach to Landscape Character Assessment;
- Planning Inspectorate (2018). Advice Note Nine: Rochdale Envelope; and
- Tendring District Council (adopted 2021). Tendring District Local Plan 2013-2033 and Beyond.

24. Selected relevant policies from the Tendring District Local Plan 2013-2033 and Beyond are summarised in Table 30.5 together with an indication of the section of the ES chapter where each is addressed.

Table 30.5 Tendring Local Plan Policies

Policy reference	Policy	ES reference
PPL 3 The Rural Landscape	The Council will protect the rural landscape and refuse planning permission for any proposed development which would cause overriding harm to its character or appearance, including to: a. estuaries, rivers and undeveloped coast; b. skylines and prominent views including ridge-tops and plateau edges; c. traditional buildings and settlement settings; d. native hedgerows, trees and woodlands; e. protected lanes, other rural lanes, bridleways and footpaths; and f. designated and non-designated heritage assets and historic landscapes including registered parks and gardens. Development proposals affecting protected landscapes must pay particular regard to the conservation and enhancement of the special character and appearance of the Dedham Vale and Suffolk Coast and Heaths AONBs, and their settings, including any relevant AONB Management Plan objectives. Elsewhere, development proposals should have regard to the Natural England Character Area profiles for the Greater Thames Estuary (No.81) and the Northern Thames Basin (No.111) and the Council's Landscape Character Assessments, as relevant, and should protect and reinforce identified positive landscape qualities. New development within the rural landscape should minimise the impact of light pollution on the site and its surroundings, in order to protect rural amenity and biodiversity.	The siting of the onshore substation and onshore cable route avoids, as far as practicable, impacts on the features specifically listed. Residual impacts on landscape features are described in Section 30.6.4. The onshore project area is not located in any protected landscape, as described in Section 30.5.3. Natural England Character Profiles and the Tendring Landscape Character Assessment are discussed in Section 30.5.2. The effects of lighting are assessed in Section 30.6. No lighting would be required during normal operation of the onshore substation, as set out in ES Chapter 5 Project Description (Document Reference: 3.1.7).

30.4.2 Data sources

30.4.2.1 Site specific

25. To provide site specific and up to date information on which to base the LVIA, a site characterisation survey and subsequent visits to assessment viewpoints were carried out between November 2021 and October 2023.

30.4.2.2 Other available sources

26. The following information sources have been referred to in carrying out this assessment:

- Natural England (2014). National Character Area Profiles;
- Suffolk & Essex Coast & Heaths National Landscape Partnership (2023). Suffolk and Essex Coast and Heaths National Landscape Management Plan 2023-28;
- Dedham Vale AONB Partnership (2021). Dedham Vale Area of Outstanding Natural Beauty Management Plan 2021-2026;
- Allison Farmer Associates (2016) The Dedham Vale AONB Natural Beauty and Special Qualities and Perceived and Anticipated Risks, Final Report (2016);
- Suffolk Coasts and Heath AONB Partnership (2018). Guidance on the selection and use of colour in development;
- Dedham Vale National Landscape and Coast and Heaths National Landscape (2023). Guidance to reduce light pollution and protect our dark skies;
- Land Use Consultants (2001). Tendring District Landscape Character Assessment. Prepared for Tendring District Council;
- Essex County Council (2002). Landscape Character Assessment of the Essex Coast;
- Ordnance Survey (OS) maps at a range of scales;
- OS digital terrain model (DTM) datasets; and
- Aerial and street-level photography available online.

30.4.3 Impact assessment methodology

27. The likely significant effects of the onshore components of the Project have been determined by professional consideration of the sensitivity of the receptor and the magnitude of the potential impact. The methodology is in accordance with the guidance set out in Guidelines for Landscape and Visual Impact Assessment (3rd Edition, 'GLVIA3'), and as such slightly differs to the approach taken by other topic specialists as presented in the ES. Detailed information about the approach to assessment of sensitivity is provided in ES Appendix 29.1 (Document Reference: 3.3.69).

30.4.3.1 Sensitivity of receptors

28. 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.

29. 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.

30. Judgements have been recorded as high, medium or low, as defined in Table 30.6 for landscape receptors and Table 30.7 for visual receptors.

Table 30.6 Sensitivity of Landscape Receptors

Sensitivity	Definition
High	Landscapes which by nature of their character would be less able to accommodate development without change in character, due to their relatively higher susceptibility to the type of change proposed, and/or the higher value placed upon them by society.
Medium	Landscapes which by nature of their character would be able to accommodate development, subject to careful siting and design, due to their more moderate susceptibility to the type of change proposed, and/or relatively moderate value placed upon them by society.
Low	Landscapes which by nature of their character would be more able to accommodate development without substantive change in character, due to their relatively lower susceptibility to the type of change proposed, and/or lower value placed upon them by society.

Table 30.7 Sensitivity of Visual Receptors

Sensitivity	Definition
High	Larger numbers of viewers and/or those with proprietary interest and prolonged viewing opportunities such as residents and users of attractive and well-used recreational facilities. The quality of the existing view, as likely to be perceived by the viewer, is considered to be high.
Medium	Small numbers of residents or moderate numbers of recreational viewers, with an interest in their environment. Larger numbers of recreational road users. The quality of the existing view, as likely to be perceived by the viewer, is considered to be medium.
Low	Small numbers of recreational viewers with interest in their surroundings. Viewers with a passing interest not specifically focussed on the landscape e.g. workers, commuters. The quality of the existing view, as likely to be perceived by the viewer, is considered to be low.

30.4.3.2 Magnitude of impact

31. The magnitude of impacts has been identified through consideration of the scale of change to baseline conditions predicted as a result of the onshore components of the Project, and the geographical extent, duration and reversibility of the impact. This professional judgement has been made in line with guidance and legislation, as listed in Section 30.4.1.2.

32. Judgements regarding the magnitude of landscape or visual impact have been recorded as high, medium, low or negligible, as defined in Table 30.8 for landscape receptors and Table 30.9 for visual receptors.

Table 30.8 Magnitude of Landscape Impact

Magnitude	Definition
High	A clearly evident and frequent/continuous change in landscape features and characteristic affecting an extensive area (relative to the Hornsea Four landscape and visual study area), or the characteristics, and/or notable widespread alteration to the special or key qualities of designated areas.
Medium	A moderate change in landscape features and character, frequent or continuous, and over a wide area, or a clearly evident change either over a restricted area, and/or with some alteration to the special or key qualities of designated areas.
Low	A small change in landscape features and character over a wide area or a moderate change over a more restricted area, and/or barely altering the special of key qualities of designated areas.
Negligible	An imperceptible, barely or rarely perceptible change in landscape features and character, and/or not altering the special or key qualities of designated areas.

Table 30.9 Magnitude of Visual Impact

Magnitude	Definition
High	Large change in view, perhaps where the development is in close proximity in a direct line of vision, or affecting a substantial part of the view, or providing contrast with the existing view.
Medium	Clearly perceptible change in view, perhaps where the development is relatively close but at an oblique angle or further away in the direct line of vision, creating a distinct new element in the view.
Low	Small change in view, perhaps where the development is at a distance or oblique angle, or where the scale of the landscape absorbs the development well.
Negligible	Change in view which is barely perceptible.

30.4.3.3 Significance of effect

33. The sensitivity of the landscape or visual receptor and the magnitude of the predicted impact has been used as a guide, informed by professional judgement, to assess the significance of the likely effects.

34. ES Appendix 29.1 (Document Reference: 3.3.69) provides full details of the criteria considered in judging the identified aspects of sensitivity (susceptibility and value) and magnitude of impact (scale, geographical extent, duration and reversibility), and the grades used to describe each.

35. 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. 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 Plate 30.1.

36. Effect significance has been identified as negligible, minor, moderate or major (including intermediate judgements where appropriate). Moderate, major-moderate and major effects are considered significant in EIA terms. Effects which are below moderate, e.g. moderate-minor, are considered not significant. Definitions of significance levels are provided in Table 30.10.

37. In terms of the direction of effects (beneficial or adverse) there is a wide spectrum of opinion with regard to offshore wind energy and its associated onshore development. Taking a precautionary stance, effects are assumed to be adverse, unless stated otherwise.

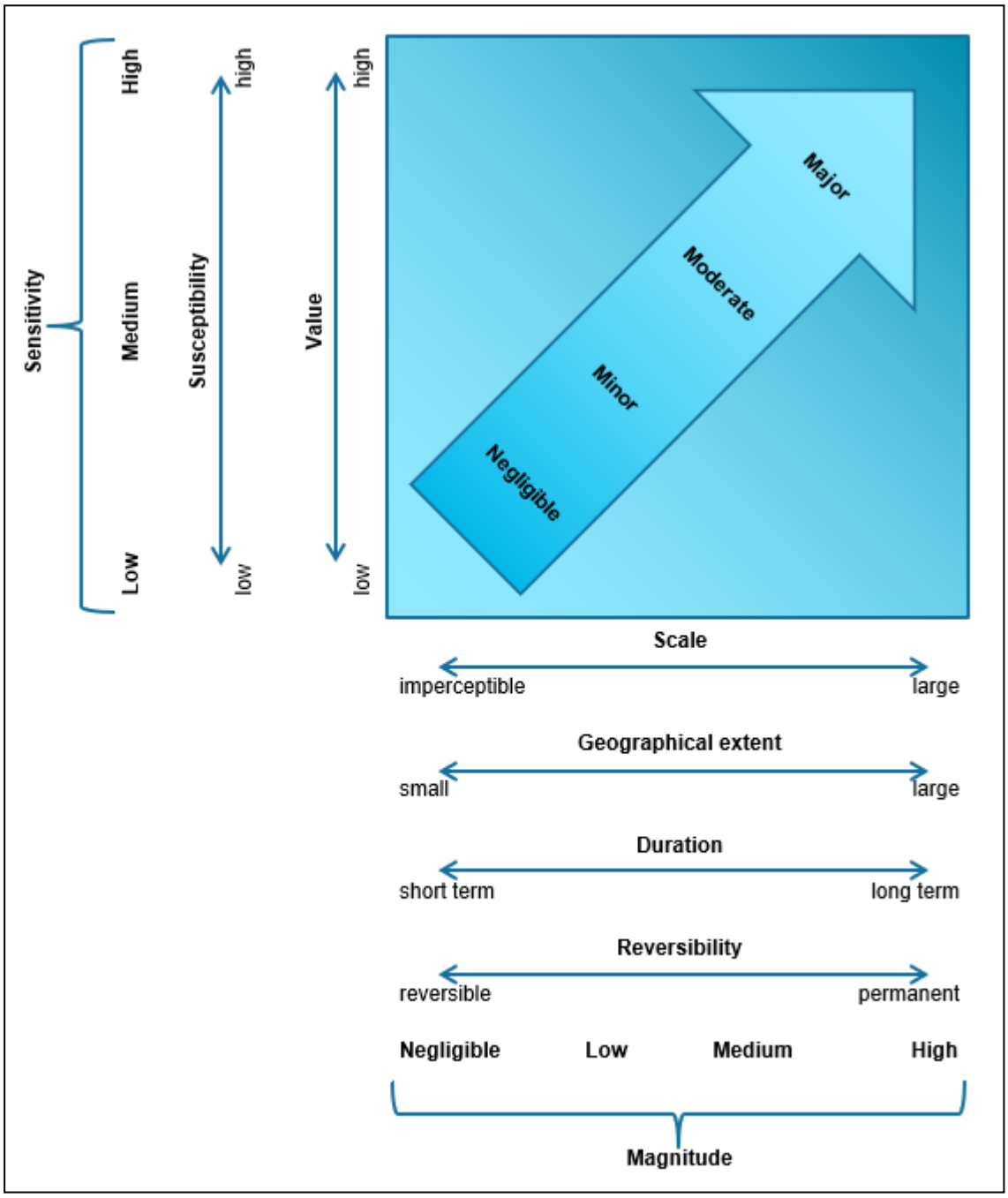

Plate 30.1 Guide to Judging Levels of Effect

Table 30.10 Levels of Effect Significance

Level	Definition
Major	The proposed development will result in an obvious change in baseline characteristics, likely affecting a receptor with a medium or high susceptibility to that type of change, and/or which is highly valued at a national level. The effect is likely to be long term and affect a relatively large area.
Moderate	The proposed development will result in a noticeable change in baseline characteristics, likely affecting a receptor with a medium sensitivity to that type of change. This level of effect may also occur when a smaller scale of effect acts on a higher-sensitivity receptor, or when a large scale of effect occurs over a relatively short period or over a small area.
Minor	The development will result in a small change in baseline characteristics over a long term, or a larger scale of effect of short duration or confined to the site.

Level	Definition
Negligible	The development will not result in a noticeable change in baseline characteristics.

30.4.4 Cumulative effects assessment methodology

38. The CEA considers other plans, projects and activities that may interact with the Project to result in likely significant effects. ES Chapter 6 EIA Methodology (Document Reference: 3.1.8) provides further details of the general framework and approach to the CEA. Section 30.8 provides more specific detail about how the CEA has been undertaken for this Chapter.

30.4.5 Transboundary effects assessment methodology

39. 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. ES Chapter 6 EIA Methodology (Document Reference: 3.1.8) provides further details of the general framework and approach to the assessment of transboundary effects.

40. For LVIA, no potential for transboundary effects have been identified and therefore are not considered in this chapter.

30.4.6 Assumptions and limitations

41. Detailed design information is unavailable pre-consent. The assessment is therefore based on worst-case scenario assumptions, as set out in Section 30.3.2. While this somewhat limits the detail that can be presented, the Project envelope approach is considered to be well understood and a suitable basis for assessment.

42. Similarly, detailed design information was not available on the developments considered in the cumulative assessment. Worst-case scenario assumptions were made in relation to these other projects, and these are described in Section 30.8.3.

43. 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 assessment of likely significant effects on landscape, views and visual amenity.

30.4.7 Visualisation methodology

44. 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 ES Appendix 29.1 (Document Reference: 3.3.69).

45. The onshore visuals illustrate a photo-realistic representation of the indicative AIS substation. The overall footprint of this feature is 280m by 210m and the height of the tallest component in this feature is 18m (lightning rods). The

onshore visuals illustrate this feature at year 1, when landscape mitigation planting is immature, and year 15, when landscape mitigation planting is established. The height and form of the landscape mitigation planting at year 15 has been informed by the Landscape Mitigation Plan (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)).

46. The onshore visuals also illustrate other projects to inform the cumulative assessment (see Section 30.8). The Five Estuaries onshore substation is shown, based on a 3D model provided by Five Estuaries Offshore Wind Limited. The approximate extent of the proposed NGET Norwich to Tilbury substation is indicated, based on parameter information provided by National Grid.

30.5 Existing environment

30.5.1 Onshore project area

47. The onshore substation works area is located to the north-east of the existing substation, to the north of Ardleigh Road. It is located approximately 2km to the south-west of the settlement of Lawford, in Tendring.

48. The landform across the onshore substation works area is generally flat, and is approximately 35m Above Ordnance Datum (AOD). The landcover is characterised by arable farmland with a large-scale field pattern. Field boundaries 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 Lawford substation on Ardleigh Road, to the south-west of the onshore substation works area. It is open to farmland to the east and south. A steel-tower overhead electricity line crosses the north-western edge of the onshore substation works area.

49. The onshore substation works area 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).

50. The landfall is located on the coastline between Frinton-on-Sea and Clacton–on-Sea (refer to ES Figure 30.1.1b (Document Reference: 3.2.26)).

51. 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 route is shown on ES Figure 30.1.1b (Document Reference: 3.2.26). From the landfall location, the cable route travels north-west, through Tendring. It passes to the north of the small settlement of Thorpe le Soken. The cable route then continues in a north-west direction, where is crosses the A120 near Horsley Cross and then continues in a more westerly direction on the approach to the onshore substation. There will also be a short section of 400kV onshore cable, which links the proposed substation to the proposed Norwich to Tilbury Project substation (refer to ES Figure 30.1.5 (Document Reference: 3.2.26) for location).

30.5.2 Landscape character

52. 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.

53. The LVIA study area is within the area covered by the Tendring District Landscape Character Assessment (LUC, 2001), and this forms the primary reference for landscape character. References to landscape character areas (LCA) are from this document. Reference was also made to the Landscape Character Assessment of the Essex Coast (Essex County Council, 2002). This overlaps with the Tendring Landscape Character Assessment, and provides more detail on local typology of coastal character. The landscape units within the Tendring Landscape Character Assessment are considered to be the most appropriate reporting units. LCAs across the study area are mapped on ES Figure 30.1.3 (Document Reference: 3.2.26).

54. The onshore substation works area is located in LCA 7A Bromley Heaths, within the Heathland Plateaux Landscape Character Type (LCT). The key characteristics of this LCA 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."*

55. 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 other LCAs require 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 30.11, with LCAs carried forward for assessment highlighted in **bold**.

Table 30.11 Landscape Character Areas

Landscape Character Area	Considerations to determine if LCA is carried forward for detailed assessment
7A Bromley Heaths – (Heathland Plateaux LCT)	The North Falls onshore substation works area is within this LCA, as well as a section of the onshore cable route between Tendring Heath and the onshore substation. Assessed in the LVIA.
2C Holland Haven (Drained Estuarine/ Coastal Marsh LCT)	The landfall and a section of the onshore cable route is within this LCA. Assessed in the LVIA.
3D Holland Coastal Slopes (Coastal Slopes LCT)	A short section of the onshore cable route is within this LCA. Assessed in the LVIA.
8B Clacton and the Sokens Clay Plateau (Clay Plateaux LCT)	A section of the onshore cable route is within this LCA, between Great Holland and Thorpe-le-Soken. Assessed in the LVIA.
6D Holland Valley System (Clay Valleys LCT)	Two short sections of the onshore cable route are within this LCA, near Great Holland and near Tendring. Assessed in the LVIA.
3A Hamford Coastal Slopes (Coastal Slopes LCT)	A section of the onshore cable route is within this LCA, near Thorpe-le-Soken. Assessed in the LVIA.
8A Tendring and Wix Clay Plateau	A section of the onshore cable route is within this LCA, between Thorpe Green and Tendring Heath. Assessed in the LVIA.
6A Stour Valley System (Clay Valleys LCT)	A very small area of the LCA is within the LVIA study area, near Lawford. Given intervening vegetation and nature of the LCA terrain (which falls away from the onshore substation works area towards the Stour) effects on landscape character unlikely to be significant. Not considered further.

30.5.3 Landscape Designations

30.5.3.1 Suffolk and Essex Coast and Heaths National Landscape

56. The Suffolk and Essex Coast and Heaths National Landscape (an 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, from the north of the River Stour is recognised. An assessment viewpoint is included from here, see Viewpoint 1 (ES Figure 30.2.1 (Document Reference: 3.2.26)). This confirms that visibility from the National Landscape, towards the onshore substation, will be limited. Due to viewing distance and limited nature of actual visibility, landscape effects on the special qualities of the National Landscape are unlikely to be significant. As such, landscape effects relating to the onshore features of the Project on the special qualities of this National Landscape have not been considered further, in this assessment. A detailed assessment of effects of the offshore elements of the Project on the special qualities of the National Landscape is provided in ES Chapter 29 Seascape, Landscape and Visual (Document Reference: 3.1.31).

30.5.3.2 Dedham Vale National Landscape

57. The Dedham Vale National Landscape (an AONB) is located to the north of the LVIA study area, just within 2km of the onshore substation works area. The Dedham Vale AONB Natural Beauty and Special Qualities and Perceived and Anticipated Risks, Final Report (2016) identifies the following special qualities of the area, and provides further detailed evidence to support these identified qualities:

- *"Iconic lowland river valley associated with the artist John Constable RA, the views he painted are still recognisable today;*
- *Historic villages with timber framed housing and prominent churches;*
- *Valley bottom grazing marshes with associated drainage ditches and wildlife;*
- *Naturally functioning River Stour with associated tributaries, meres and historic river management features;*
- *Semi natural ancient woodlands on valley sides and associated wildlife;*
- *Traditional field boundaries intact and well managed;*
- *Apparent and buried archaeology indicating millennia of human occupation;*
- *A sense of relative tranquillity; and*
- *Surprisingly long distance views from higher ground along the valley in an area associated with large skies."*

58. The onshore substation is located outside of the National Landscape (at a distance of approximately 1.8km) so any effects on the National Landscape will be indirect. Landscape features such as the lowland river valley; historic villages; grazing marshes; River Stour; ancient woodlands; traditional field boundaries and archaeology will remain intact.

59. The ZTV (refer to ES Figure 30.1.2 (Document Reference: 3.2.26)) identifies a small area of theoretical visibility from the southern edge of the National Landscape (within 2km) along Harwich Road. Intervening woodland cover and built form 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, outward views, from the southern edge of the National Landscape have been influenced by electricity infrastructure. An assessment viewpoint has been included from this vicinity, refer to Viewpoint 8 (ES Figure 30.2.8 (Document Reference: 3.2.26)). This highlights the limited nature of visibility from the southern edge of the National Landscape, and the associated limited nature of effects on the more perceptual aspects of the National Landscape, such as the sense of 'tranquillity' and 'large skies'.

60. The potential for notable views from the wider National Landscape is also considered unlikely, given:

- The more inland location and lower lying and narrower nature of the river corridor, where the landform screens views towards the substation site;
- Where longer distance views from the southern (and closer) edge of the National Landscape are available, these tend to be focused north, over Dedham Vale; and
- Intervening vegetation and gently undulating/ flatter terrain, between the National Landscape and the onshore substation works area, which combine to limit actual visibility towards the onshore substation works area (outside the National Landscape to the south).

61. As such, effects on the special qualities of this National Landscape are unlikely to be significant and have not been considered further in this assessment. An assessment viewpoint, from the southern edge of the National Landscape, is provided as Viewpoint 8 (ES Figure 30.2.8 (Document Reference: 3.2.26)), and this is discussed in Section 30.6.5.

30.5.3.3 Local Level Landscape Designations

62. There are no relevant local landscape designations in Tendring which required detailed assessment.

30.5.4 Visual amenity

63. 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.

30.5.4.1 Analysis of visibility of the onshore components of the Project

64. ES Figure 30.1.2 (Document Reference: 3.2.26) shows the theoretical visibility of the onshore substation, based on a 3d model of the indicative AIS substation, with features up to 18m in height (lightning rods).

65. The ZTV indicates a more widespread pattern of theoretical visibility within a 1km radius of the onshore substation. The pattern of visibility becomes more intermittent beyond 1km, particularly to the north-west, north-east and south-west, where the landform falls in elevation.

66. The landscape around the onshore substation works area 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. Winter and summer baseline photography has been provided from the assessment viewpoints.

30.5.4.2 Key visual receptors

67. 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.

68. 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.

69. There are no footpaths across the onshore substation works area. Boundaries to the south of the onshore substation, 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.

70. In terms of wider views, the LVIA study area is generally flat. Hedgerows and areas of woodland will help to filter and screen middle to longer distance views.

71. Potential visual receptors (including visual receptors along the onshore cable route) 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.

30.5.4.3 Selection of viewpoints for assessment

72. 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.

73. A total of eight viewpoints were selected across the LVIA study area through desk study, site work and discussions with statutory consultees. This includes the seven viewpoints which were presented in the PEIR, plus a further viewpoint. The additional viewpoint was included to illustrate potential views from the Dedham Vale National Landscape. The same viewpoint has also been used in the Five Estuaries LVIA. Photography for this additional viewpoint was captured in autumn 2023. Due to Project programme, it was not possible to provide a summer baseline view from this viewpoint.

74. 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 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;
- Locations which illustrate key cumulative interactions with other similar types of development;
- Locations that have been used in LVIA for nearby developments, particularly the Five Estuaries onshore substation; 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).

75. The viewpoints are listed in Table 30.12 and shown alongside the ZTV on ES Figure 30.1.2 (Document Reference: 3.2.26).

Table 30.12 LVIA assessment viewpoints

Viewpoint	Location	Grid Reference	Reason for selection
1	Court Farm, Stutton Road	612400 234489	To represent longer distance views from Suffolk and Essex Coast and Heaths National Landscape, 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 and Essex Coast and Heaths National Landscape.
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 onshore substation works area.
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 the local road network, on western approach to the onshore substation works area.
5	PRoW near Lilley's Farm	607763 228002	To represent views from footpath network, near Lilley's Farm, to south of onshore substation works area.
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 onshore substation works area. A similar viewpoint is used in the Five Estuaries LVIA.
8	Essex Way, Dedham Road	608071 231561	To represent views from the long-distance footpath at the edge of the Dedham Vale National Landscape. The same viewpoint is used in the Five Estuaries LVIA.

30.5.5 Public Rights of Way

76. 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.

77. Based on an analysis of the ZTV (refer to ES Figure 30.1.2 (Document Reference: 3.2.26)) and likely actual visibility as experienced 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).

30.5.6 Future trends in baseline conditions

78. In the event that the Project is not developed, a description of the anticipated changes in future baseline conditions for onshore landscape is presented within this section.

79. In the absence of the Project, it is likely that the onshore substation works area and onshore cable route would continue under the same land uses, large parts of which are associated with agricultural use. If North Falls was not progressed, then the Five Estuaries substation could still be constructed, as well as the NGET Norwich to Tilbury project. These developments would affect the baseline in future through the presence of substations and overhead power lines.

80. The wider surrounding landscape and visual amenity is likely to be further influenced by a number of 'forces for change'.

81. 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

82. The following sections describe the impacts and effects 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 30.4.3. The assessments are based on the worst-case scenario 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 Likely significant effects during construction

83. During the construction phase, there will be potential short-term landscape and visual impacts arising from the presence of partially constructed infrastructure and undertaking of construction activities/ movement of construction vehicles and plant in the onshore project area. Impacts occurring during the construction phase are considered to be short-term, reversible and adverse, unless otherwise stated.

84. 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;
- Bentley Road improvement works;
- Onshore substation; and
- Temporary onshore substation construction compound.

30.6.2 Likely significant effects during operation

85. The operational lifespan of the Project is assumed to be 30 years. The main impacts of the onshore components of the Project, once operational, on landscape and visual amenity will arise from the presence of the onshore substation and other above ground structures, as described in ES Chapter 5 Project Description (Document Reference: 3.1.7). Impacts occurring during the operational phase are considered to be long-term and permanent unless otherwise stated.

86. Maturing landscape mitigation, including areas of native woodland planting and hedgerows as shown on the landscape mitigation plan (ES Figure 30.1.6 (Document Reference: 3.2.26)), will assist in integrating the onshore substation into the wider landscape fabric of farmland, hedgerows and areas of woodland, helping to reduce the level of impact from certain landscape and visual receptors. As such, year 1 and year 15 operational assessments have been undertaken. The year 15 assessment considers impacts when landscape mitigation planting is established, and will offer a level of screening.

87. During operation, it is expected that there will be no further requirement for land to be disturbed or excavated, except in the event that onshore cables require repair or maintenance or the onshore substation access works needing to be reinstated. However, these activities would not extend beyond the construction footprint assessed above, and for the former would be relatively rare and localised in occurrence. For the latter, the haul road required to access the onshore substation, required in the unlikely event of transformer failure, would potentially be in place for up to 7 months, but its location would be over land already disturbed during construction. As such, direct and indirect physical impacts on landscape and visual receptors arising from these activities during operation have been scoped out of further assessment, as impacts would be no worse than that which has already occurred during the construction phase.

30.6.3 Likely significant effects during decommissioning

88. 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. The substation equipment will likely be removed and reused or recycled after its operational lifespan. For the purposes of assessment, on a worst case scenario basis, the presence of the substation is assumed to be permanent.

89. It is expected the onshore export cables will be removed from ducts and recycled, with the transition pits and ducts left in situ.

90. 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.

91. 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 Assessment of landscape effects during construction, operation and decommissioning

92. The assessment of effects on landscape is presented for the onshore substation works area (Section 30.6.4.1) to cover long-term physical effects on the landscape fabric, and for the LCAs listed in Table 30.11 (Section 30.6.4.2) to cover effects on landscape character. Effects around the onshore substation are considered at year 1 and year 15 to account for maturing mitigation planting. Effects along the onshore cable route are only considered at year 1.

30.6.4.1 Onshore substation works area

93. Landscape effects during construction, operation and decommissioning of the onshore substation and associated works are set out in Table 30.13 below.

Table 30.13 Landscape effects during construction, operation and decommissioning in the onshore substation works area

Receptor	Onshore substation works area
Baseline Description	Description of the onshore substation works area is provided at Section 30.5.1 onwards. The photograph below (looking north over the onshore substation works area from Ardleigh Road between VP03 and VP04 in ES Figure 30.1.2 (Document Reference: 3.2.26)) illustrates the landscape character of the onshore substation works area, 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 works area is low density and the road pattern is characterised by minor rural roads. 
Sensitivity	Whilst the onshore substation works area 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. The onshore substation works area is not designated, indicating a lower value. The landscape sensitivity to the type of development proposed is judged to be medium-low.
Construction/ Decommissioning Effects	The landscape of the onshore substation works area 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 works area will include the removal/ disturbance to areas of arable farmland and field boundaries. Disturbance to

Receptor	Onshore substation works area
	surrounding hedgerows and woodland will be minimal. Further detail on vegetation removal is provided in ES Chapter 23 Onshore Ecology (Document Reference: 3.1.25). 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 construction will be reversible, with areas of disturbed ground reinstated following completion of all works in accordance with best practice guidance. However, the permanent infrastructure components introduced during this phase will remain into the operational phase. The magnitude of landscape impact for the onshore substation works area during construction is judged to be high. Combined with the medium-low sensitivity of the onshore substation works area, the landscape effect during construction is judged to be moderate adverse, which is significant in EIA terms. Effects would be short term.
Operational Effects (year 1)	The introduction of the onshore substation and associated access, security and drainage infrastructure will result in direct, large scale landscape change experienced at a localised level. The onshore substation works area will change in character from open arable fields to a site housing large scale electricity infrastructure. At year 1, the associated landscape mitigation will offer little in the way of screening. The magnitude of landscape impact at year 1 is judged to be high. Combined with the medium-low sensitivity of the onshore substation works area, the landscape effect during operation (year 1) is judged to be moderate adverse, which is significant in EIA terms. Effects would be long-term.
Operational Effects (year 15)	By year 15, and as landscape mitigation planting (refer to ES Figure 30.1.6 (Document Reference: 3.2.26), including native woodland, trees and hedgerows) around the onshore substation becomes established, it will help to soften and screen views of this feature and integrate it into the landscape. The change in character from open arable fields will still be apparent however, the influence of electricity infrastructure on the local landscape character will reduce as planting matures. The magnitude of landscape impact at year 15 is judged to be medium-high. Combined with the medium-low sensitivity of the onshore substation works area, the landscape effect during operation (year 15) is judged to be moderate adverse, which is significant in EIA terms. Effects would be long-term.

30.6.4.2 Effects on landscape character

94. 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 30.11. Further information on key characteristics of each LCA is provided for each receptor below.

Table 30.14 Effects on 7A Bromley Heaths LCA

Receptor	7A Bromley Heaths LCA (Heathland Plateaux LCT)
Baseline Description	The onshore substation works area and a section of the onshore cable route is located in this LCA (refer to ES Figure 30.1.3 (Document Reference: 3.2.26)). The key characteristics, as defined in the Tendring District Landscape Character Assessment (2001), 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.*

Receptor	7A Bromley Heaths LCA (Heathland Plateaux LCT)
	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.* *Dramatic, dominating skyline*."
Sensitivity	Due to the large scale field pattern, flatter terrain, areas of woodland and hedgerows and low density settlement pattern, the characteristics of this landscape are judged to be of medium susceptibility to the type of development proposed. The LCA is not in any designated landscapes, indicating a lower value. The landscape sensitivity of this LCA to the type of development proposed is judged to be medium.
Construction/ Decommissioning Effects	Beyond the direct landscape changes arising from the construction of the main components of the onshore substation (detailed in Table 30.13 above) and onshore cable route , there will also be some very localised effects associated with the improvement works to Bentley Road, to the north of the A120. The very localised loss of arable farmland and temporary disturbance to farmland/ hedgerows and field boundaries associated with construction of the onshore works, will not extend beyond the red line boundary to the wider extents of the LCA. As far as practicable, areas of woodland will be avoided. Further detail on vegetation removal is provided in ES Chapter 23 Onshore Ecology (Document Reference: 3.1.25). The construction of the main components of the onshore substation, drainage and access road, together with installation of onshore export cables and Bentley Road improvement works, will be evident from very localised areas of this LCA in proximity to the works. The experience of construction activities and the introduction of the main larger vertical 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 '*dramatic, dominating skylines'* and the more rural perceptual characteristics. 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. This LCA has also already been altered by electricity infrastructure, including a large scale steel tower overhead line. The geographical extent of the impact will be limited to the onshore cable route, and the area immediately around the onshore substation works area. The duration of construction impacts will be short-term, and disturbance necessary to facilitate construction will be largely reversible (with the exception of permanent works). The magnitude of landscape impact during construction will be medium-low along the onshore cable route, and within the area around the onshore substation works area (approximately bounded by Ardleigh Road to the south, Grange Road to the south-west, Wormseywood Farm to the north, and the junction of Barn Lane and Ardleigh Road to the east). Taking account of the medium sensitivity, the landscape effect within these areas is judged to be minor adverse, which is not significant in EIA terms. Magnitude of impact will be negligible across the LCA more widely, resulting in landscape effects which are negligible and not significant in EIA terms.
Operational Effects (Year 1)	Landscape change experienced in the LCA will be limited to the onshore substation and its immediate setting and from a very localised area around the Bentley Road improvement works (noting the horizontal nature of this type of feature). 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 'dramatic, dominating skylines' and more rural perceptual qualities of this LCA. 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. This LCA has also already been altered by electricity infrastructure, including a large scale steel tower overhead line. Closer to the onshore substation, the presence of the permanent infrastructure will have a greater scale of change on character. The geographical extent of the impact

Receptor	7A Bromley Heaths LCA (Heathland Plateaux LCT)
	is therefore small. The onshore substation will have a small influence on much of the wider area of this LCA. Once operational (and following the reinstatement of any temporarily removed sections of hedgerows) impacts 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 and the permanent Bentley Road improvement works. The geographical extent of these impacts will be very small. The duration of these landscape impacts will be long-term and not reversible, throughout the operational phase of the Project. There may be a requirement to temporarily reinstate the haul road between Bentley Road and Ardleigh Road. Reinstatement and subsequent removal of this road would be undertaken within 7 months, and would be a short term impact over a small geographical extent. The magnitude of landscape impact at year 1 for the LCA will be medium, within the vicinity of the onshore substation (the area approximately bounded by Ardleigh Road to the south, Grange Road to the south-west, Wormseywood Farm to the north, and the junction of Barn Lane and Ardleigh Road to the east). Taking account of the medium sensitivity, the landscape effect within this area is judged to be moderate adverse, which is significant in EIA terms. Beyond this area, magnitude of impact will be low, resulting in effects which are minor adverse and not significant in EIA terms across the remainder of the LCA.
Operational effects (Year 15)	By year 15, landscape mitigation planting around the onshore substation (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)), including native woodland, trees and hedgerows, will be established. This will help to soften and screen views of the permanent works and integrate them into the landscape. The change in character from open arable fields will still be apparent. The influence of electricity infrastructure on the local landscape character will reduce as planting matures. The magnitude of landscape impact at year 15 within the LCA will be low, due to maturing planting which will help to integrate the development into the landscape. Taking account of the medium sensitivity, the landscape effect at year 15 is judged to be minor adverse which is not significant in EIA terms.

Table 30.15 Effects on 2C Holland Haven LCA

Receptor	2C Holland Haven LCA (Drained Estuarine/Coastal Marsh LCT)
Baseline Description	A section of the onshore cable route and the Project landfall is located in the LCA (refer to ES Figure 30.1.3 (Document Reference: 3.2.26)). The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows: • *"Small character area on the coastal edge separating Clacton and Frinton.* • *Former open estuarine marsh associated with Holland Brook, enclosed by a sea wall in the 17th century.* • *Concrete sea wall withstands the eroding forces of the sea and a series of groynes and breakwaters along the coastal side of the wall protects the sandy beach.* • *Golf course occupies part of former grazing marsh.* • *A golf club house is the only built development resulting in a remote, tranquil character.* • *Long views over the landscape from the coastal sea wall and from Great Holland."*
Sensitivity	The smaller scale, coastal character with areas of more remote character indicate a medium-high susceptibility, to the type of development proposed. The LCA is not in any designated landscapes, indicating a lower value. The landscape sensitivity of this LCA to the type of development proposed, is judged to be medium-high.

Receptor	2C Holland Haven LCA (Drained Estuarine/Coastal Marsh LCT)
Construction/ Decommissioning Effects	The export cable and associated landfall will be constructed through the use of HDD below this area. There will be no direct impacts at the coastal edge or beach, though vessels may be visible near to shore during cable-pull works. Inland, construction works will be visible in the landscape, including those associated with the landfall compound and disturbance associated with drilling. Works are unlikely to notably alter key characteristics of the LCA, and the scale of change will be medium within the onshore cable route and landfall area. The geographical extent is therefore small. The duration of construction effects will be short-term, and any disturbance necessary to facilitate construction will be reversible. The magnitude of landscape impact during construction within this LCA will be low. 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.
Operational Effects	Once operational, the magnitude of landscape impact associated with underground cables will be negligible, and landscape effects are considered to be negligible and 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, associated with any above ground link boxes at jointing bays along the onshore export cable and at the transition joint bays at landfall.

Table 30.16 Effects on 3D Holland Coastal Slopes LCA

Receptor	3D Holland Coastal Slopes LCA (Coastal Slopes LCT)
Baseline Description	A small section of the onshore cable route is located in the LCA (refer to ES Figure 30.1.3 (Document Reference: 3.2.26)). The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows: • "Coastal slopes between Clacton and Frinton descend, gradually and uniformly, to the flat marshes of the coastal edge. • Large scale, regimented fields of late enclosure enhance the smooth descending landform. • Arable fields divided by low, scrubby and intermittent hedgerows. • Belts of poplar, but little woodland. • The low density suburbs of Frinton expand onto the slopes. • Views over Holland Haven."
Sensitivity	The gently undulating terrain, larger scale, land use and settlement pattern indicate a medium susceptibility to the type of development proposed. The LCA is not in any designated landscapes, indicating a lower value. The landscape sensitivity of this LCA to the type of development proposed is judged to be medium.
Construction/ Decommissioning Effects	There will be direct landscape changes arising from the construction of the onshore export cables, including excavation, compounds, fencing and restoration works. The construction works will be visible, but this is unlikely to notably alter key characteristics of the landscape such as the *'views over Holland Haven'.* The scale of change will be medium within the onshore cable route. Temporary disturbance to farmland and hedgerows/ field boundaries will not extend beyond the onshore cable route, to the wider extents of the LCA. The geographical extent is therefore small. The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be reversible. The magnitude of landscape impact during construction within this LCA will be low within the onshore cable route, and negligible for the LCA more widely. Taking account of the medium sensitivity, landscape effects for this LCA are judged to be minor adverse, which is not significant in EIA terms.
Operational Effects	Once operational, the magnitude of landscape impact will be negligible, and landscape effects associated with an underground cable are considered to be

Receptor	3D Holland Coastal Slopes LCA (Coastal Slopes LCT)
	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, associated with any above ground 'link boxes' at jointing bays along the onshore export cable.

Table 30.17 Effects on 8B Clacton and the Sokens Clay Plateau LCA

Receptor	8B Clacton and the Sokens Clay Plateau LCA (Clay Plateaux LCT)
Baseline Description	A section of the onshore cable route is located in the LCA, between Great Holland and Thorpe-le-Soken (refer to ES Figure 30.1.3 (Document Reference: 3.2.26)). The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows: • "Gently undulating agricultural plateau, drained by the Holland Brook Valley System, in the south-east of Tendring. • Underlain by a solid geology of London Clay which gives rise to slowly permeable, seasonally waterlogged clayey soils and standing water. • Low, gappy hedgerows with occasional hedgerow trees divide arable fields. • Remnants of ancient oak and sweet chestnut coppice woodland, including Weeleyhall Wood, one of the finest woods in the district. • 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. • Urban fringe character enhanced by presence of nurseries, caravan parks, paddocks, holiday parks and industrial estates on the edges of Clacton and Frinton. • Thorpe-le-Soken is a rural settlement, important in medieval times, and has a wealth of historic buildings."
Sensitivity	The gently undulating terrain and urban fringe character indicate a medium-low susceptibility to the type of development proposed. The LCA is not in any designated landscapes, indicating a lower value. The landscape sensitivity of this LCA to the type of development proposed, is judged to be medium-low.
Construction/ Decommissioning Effects	There will be direct landscape changes arising from the construction of the onshore export cable, including excavation, compounds, fencing and restoration works. The construction works will be visible in the landscape, but this is unlikely to notably alter key characteristics of the LCA. The scale of change will be medium within the onshore cable route. Temporary disturbance to farmland and hedgerows/ field boundaries will not extend beyond the onshore cable route to the wider extents of the LCA. The geographical extent is therefore small. As far as practicable areas of woodland and important hedgerows will be avoided, either through detailed route design or through the use of trenchless techniques. The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be reversible. The magnitude of landscape impact during construction within this LCA will be low within the onshore cable route, and negligible for the LCA more widely. 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.
Operational Effects	Once operational, the magnitude of landscape impact will be negligible, 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, associated with any

Receptor	8B Clacton and the Sokens Clay Plateau LCA (Clay Plateaux LCT)
	above ground link boxes at jointing bays along the onshore export cable, as the land will be reinstated and returned to agriculture.

Table 30.18 Effects on 3A Hamford Coastal Slopes LCA

Receptor	3A Hamford Coastal Slopes LCA (Coastal Slopes LCT)
Baseline Description	A section of the onshore cable route is located in the LCA north of Thorpe-le-Soken (refer to ES Figure 30.1.3 (Document Reference: 3.2.26)). The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows: • "Gently sloping land encircling, and forming the setting of, the open marshes of Hamford Water. • Low, scrubby and intermittent hedgerows divide regimented fields typical of late enclosure. • Scattered farmsteads and manorial halls form a dispersed settlement pattern. • Kirby-le-Soken is an historic settlement, located along the southern edge of Hamford Water. • Outskirts of Harwich and Frinton continue to expand onto the coastal slopes over-looking Hamford Water. • Panoramic views over Hamford Water towards Harwich."
Sensitivity	This LCA has been altered by settlement, however the gently sloping terrain and inter-visibility with Hamford Water indicate a medium susceptibility to the type of development proposed. The LCA is not in any designated landscapes, indicating a lower value. The landscape sensitivity of this LCA to the type of development proposed, is judged to be medium.
Construction/ Decommissioning Effects	There will be direct landscape changes arising from the construction of the onshore export cable, including excavation, compounds, fencing and restoration works. The construction works will be visible in the landscape to the north of Thorpe-le-Soken, but this is unlikely to notably alter key characteristics of the LCA, including the '*panoramic views over Hamford Water towards Harwich'*. The scale of change will be medium. Temporary disturbance of farmland and hedgerows/ field boundaries will not extend beyond the onshore cable route to the wider extents of the LCA. As far as practicable important hedgerows will be avoided, either through detailed route design or through the use of trenchless techniques. The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be largely reversible. The magnitude of landscape impact during construction within this LCA will be low within the onshore cable route, and negligible for the LCA more widely. Taking account of the medium sensitivity, landscape effects for this LCA are judged to be minor adverse, which is not significant in EIA terms.
Operational Effects	Once operational, the magnitude of landscape impact will be negligible, 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, associated with any above ground link boxes at jointing bays along the onshore export cable.

Table 30.19 Effects on 8A Tendring and Wix Clay Plateau LCA

Receptor	8A Tendring and Wix Clay Plateau LCA (Clay Plateaux LCT)
Baseline Description	A section of the onshore cable route is located in the LCA between Thorpe Green and Tendring Heath (refer to ES Figure 30.1.3 (Document Reference: 3.2.26)).

Receptor	8A Tendring and Wix Clay Plateau LCA (Clay Plateaux LCT)
	The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows: • "Gently undulating rural agricultural plateau in the north-east of Tendring underlain by London Clay. • Remote rural arable landscape of large scale, geometric fields divided by low, gappy hedgerows with occasional hedgerow trees. • Small remnants of ancient woodlands have a neglected coppice with standards structure. • Ancient settlement pattern of scattered farmsteads and villages. • Village greens are typical of villages, although many of these greens have been infilled by housing. • Network of narrow lanes connects the scattered farms and villages. • Views of church towers and spires across the landscape."
Sensitivity	The terrain, settlement pattern and rural land use indicate a medium-low susceptibility, to the type of development proposed. The LCA is not in any designated landscapes, indicating a lower value. The landscape sensitivity of this LCA to the type of development proposed, is judged to be medium-low.
Construction/ Decommissioning Effects	There will be direct landscape changes arising from the construction of the onshore export cable, including excavation, compounds, fencing and restoration works. The construction works will be visible in the landscape, but this is unlikely to notably alter key characteristics of the LCA, such as the '*views of church towers and spires across the landscape'.* The scale of change will be medium within the onshore cable route. Temporary disturbance of farmland and hedgerows/ field boundaries will not extend beyond the onshore cable route, to the wider extents of the LCA. The geographical extent is therefore small. As far as possible, areas of woodland and important hedgerows will be avoided either through ongoing route selection or through the use of trenchless techniques. The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be largely reversible. The magnitude of landscape change impact construction within this LCA will be low within the onshore cable route, and negligible for the LCA more widely. Taking account of the medium sensitivity, landscape effects for this LCA are judged to be minor adverse, which is not significant in EIA terms.
Operational Effects	Once operational, the magnitude of landscape impact will be negligible, 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, associated with any above ground link boxes at jointing bays along the onshore export cable.

Table 30.20 Effects on 6D Holland Valley System LCA

Receptor	6D Holland Valley System LCA (Clay Valleys LCT)
Baseline Description	Small sections of the onshore cable route are located in the LCA, near Great Holland and near Tendring (refer to ES Figure 30.1.3 (Document Reference: 3.2.26)). The key characteristics of this landscape, as identified in the Tendring District Landscape Character Assessment (2001), are as follows: • *"Steep sided valley containing Holland Brook and its tributaries, Tendring Brook and Weeley Brook and Picker's Ditch.* • *Contrast with the flat landscapes of the Tendring Plateau.* • *Seasonally waterlogged soils support a mixed wooded and pastoral landscape.* • *Ancient woodlands, typically dominated by oak, ash and sweet chestnut, are located in the wetter areas and on the steeper slopes.*

Receptor	6D Holland Valley System LCA (Clay Valleys LCT)
	• *Lanes drop down the valley sides and cross the streams, at historic crossing points, on stone or brick bridges.* • *Typically devoid of built development except for isolated cottages and a former corn mill at crow bridge.* • *Picker's Ditch has been encroached upon by residential development at Clacton.* • *Forms a setting to the Holland Floodplain SSSI."*
Sensitivity	The valley terrain, lack of development and areas of ancient woodland indicate a medium-high susceptibility to the type of development proposed. The LCA is not in any designated landscapes, indicating a lower value. The landscape sensitivity of this LCA to the type of development proposed is judged to be medium-high.
Construction/ Decommissioning Effects	There will be direct landscape changes arising from the construction of the onshore export cable, including excavation, compounds, fencing and restoration works. The construction works will be visible, but given the very short sections of this LCA that the onshore export cables pass through, key characteristics are unlikely to be altered. The scale of change will be medium within the onshore cable route. The scale of change will be medium within the onshore cable route. Temporary disturbance to farmland and hedgerows/ field boundaries will not extend beyond the onshore cable route, to the wider extents of the LCA. The geographical extent is therefore small. As far as possible, areas of woodland and 'important' hedgerows, as well as larger watercourses, will be avoided either through detailed route design or through the use of trenchless techniques. The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be reversible. The magnitude of landscape impact during construction within this LCA will be low within the onshore cable route, and negligible for the wider LCA. 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.
Operational Effects	Once operational, the magnitude of landscape impact will be negligible, 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, associated with any above ground 'ink boxes at jointing bays along the onshore export cable.

30.6.5 Assessment of visual effects during construction, operation and decommissioning

95. This section describes the construction, operational and decommissioning effects resulting from the onshore components of the Project on visual receptors. The impacts of construction and operation of the onshore substation on visual receptors are set out in Section 30.6.5.1, with reference to visualisations that are included in Volume 3.2. Impacts of construction of the landfall and onshore cable route are set out in Section 30.6.5.2.

30.6.5.1 Visual effects arising from the onshore substation

96. Impacts are assessed by considering the views from the representative viewpoints which are noted in Table 30.12 and located on ES Figure 30.1.2 (Document Reference: 3.2.26).

97. All operational effects associated with the onshore substation are considered to be long-term, non-reversible and adverse, unless stated otherwise. Effects are

assessed at year 1 and year 15 following completion, with the latter being once landscape mitigation is established. Where negligible effects are identified at year 1, no further year 15 assessment is included as mitigation planting is unlikely to be perceptible.

98. Accompanying visualisations for each assessment viewpoint are contained in Volume 3.2 of the ES prepared in accordance with the methodology set out in ES Appendix 29.1 (Document Reference: 3.3.69). The visualisations include a winter and summer baseline view, a year 1 photomontage, and a year 15 photomontage.

99. The visualisations presented in Volume 3.2 illustrate a photo realistic representation of an indicative AIS substation. The overall footprint of the substation is 280m by 210m. The height of the tallest component is 18m (lightning rods), with the tallest electrical infrastructure at 13m.

100. The visualisations also show the proposed Five Estuaries onshore substation, and indicate the likely extent of the NGET Norwich to Tilbury substation. This is to inform the assessment of cumulative effects as set out in Section 30.8.

Table 30.21 Viewpoint 1 - Court Farm, Stutton Road

Receptor	Viewpoint 1 - Court Farm, Stutton Road			
Grid Reference	612400	234489	Figure Number	30.2.1 (Document Reference: 3.2.26)
LCA	Plateau Farmland (Suffolk)		Landscape Designation	Suffolk and Essex Coast and Heaths National Landscape
Direction of View	South		Distance to the onshore substation	6.8km
Baseline Description	This viewpoint is located in Court Farm on Stutton Road. It is representative of views looking south over the Stour Estuary, in the Suffolk and Essex Coast and Heaths National Landscape as experienced by residents and recreational users to the north of the Stour Estuary. 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.			
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 a National Landscape indicating a higher value. The sensitivity of receptors at this viewpoint is judged to be high.			
Construction/ Decommissioning Effects	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. 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. The magnitude of impact during construction is judged to be negligible. Taking account of the high sensitivity, effects are judged to be negligible, which is not significant in EIA terms.			

Receptor	Viewpoint 1 - Court Farm, Stutton Road
Operational Effects (year 1)	Refer to ES Figure 30.2.1b and c (Document Reference: 3.2.26). Once operational, intervening vegetation will screen the onshore substation (maximum height of components within the onshore substation operational footprint is 18m). The magnitude of impact is judged to be negligible, and effects on receptors at this viewpoint will be negligible, which is not significant in EIA terms.

Table 30.22 Viewpoint 2 - Bridleway at Barn Lane

Receptor	Viewpoint 2 - Bridleway at Barn Lane (PRoW170-57)			
Grid Reference	609119	229055	Figure Number	30.2.2 (Document Reference: 3.2.26)
LCA	7A Bromley Heaths		Landscape Designation	N/A
Direction of View	South-west		Distance to the onshore substation	0.7km
Baseline Description	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 works area. Views from nearby properties to the west of Little Bromley, are largely screened/ filtered by intervening vegetation. The view looks over flat arable farmland, which includes the onshore substation works area. 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.			
Sensitivity	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 sensitivity of receptors at this viewpoint is judged to be medium.			
Construction/ Decommissioning Effects	During construction, close proximity views to the south-west (0.7km) 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 onshore substation works area. 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. 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. The magnitude of impact during construction is judged to be medium. Taking account of the medium sensitivity, effects are judged to be moderate adverse, which is significant in EIA terms.			
Operational Effects (year 1)	Refer to ES Figure 30.2.2b and c (Document Reference: 3.2.26). Once operational, close proximity views (0.7km) of the onshore substation will be available to the south-west, across the field in the foreground. This will include views of security fencing and substation infrastructure, with some of the taller vertical components seen above the wooded horizon. This will change the character 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 onshore substation works area. There are locations with gaps/ breaks in the			

Receptor	Viewpoint 2 - Bridleway at Barn Lane (PRoW170-57)
	hedgerow, which will offer open views to the onshore substation. Landscape mitigation will offer little additional screening at year 1. The scale of change is judged to be medium-high. The geographical extent is judged to be small. The magnitude of impact is judged to be medium at year 1. Taking account of the medium sensitivity, effects are judged to be moderate adverse, which is significant in EIA terms.
Operational Effects (year 15)	By year 15, and as landscape mitigation planting (refer to ES Figure 30.1.6 (Document Reference: 3.2.26), including native woodland, trees and hedgerows) around the onshore substation becomes established, it will help to soften and screen views of this feature and integrate it into the landscape. Taller elements of the substation, such as busbars and lighting masts, will be visible, but the bulk of the infrastructure will be screened and absorbed into the landscape. The influence of electricity infrastructure on the view will reduce as planting matures. The scale of change is judged to be low. The geographical extent is judged to be small. The magnitude of impact is judged to be low at year 15. Taking account of the medium sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms.

Table 30.23 Viewpoint 3 - Norman's Farm

Receptor	Viewpoint 3 – Norman's Farm			
Grid Reference	608405	228479	Figure Number	30.2.3 (Document Reference: 3.2.26)
LCA	7A Bromley Heaths		Landscape Designation	N/A
Direction of View	North-west		Distance to the onshore substation	0.4km
Baseline Description	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 onshore substation works area and open views from the road as it passes to the south of the onshore substation works area. The view looks over flat arable farmland, which includes the onshore substation works area. 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 onshore substation works area and linking into the existing substation of Ardleigh Road, to the west (left of the view). Mature vegetation around this existing substation screens views of this feature.			
Sensitivity	Residents are considered to be of high susceptibility. The viewpoint is not located in a designated landscape, indicating a lower value. The sensitivity of receptors at this viewpoint is judged to be medium-high.			
Construction/ Decommissioning Effects	During construction, close proximity views to the north-west (0.4km) 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. 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. The magnitude of impact during construction 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.			

Receptor	Viewpoint 3 – Norman's Farm
Operational Effects (year 1)	Refer to ES Figure 30.2.3b and c (Document Reference: 3.2.26). Once operational close proximity views to the north-west (0.4km) of the onshore substation will be available. This will include views of security fencing and substation infrastructure which will be seen rising above the trees at the far side of the foreground field, which will be retained. As well as the taller substation elements, the lower buildings will also clearly be visible across the field. This will change the character of the view, from open arable farmland to that of a more industrialised character. Landscape mitigation will offer little screening, at year 1. The scale of change is judged to be large. The geographical extent is judged to be small. The magnitude of impact is judged to be high at year 1. Taking account of the medium-high sensitivity, effects are judged to be major adverse, which is significant in EIA terms.
Operational Effects (year 15)	By year 15, landscape mitigation planting (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)) around the onshore substation will have become established. This viewpoint is located close to proposed planting near the site access, therefore trees close to the viewer will largely obscure views of the infrastructure. It is acknowledged that there are nearby locations where more of the taller elements of the onshore substation will be visible, but screen planting will help to soften and screen views and integrate the substation into the landscape. The influence of electricity infrastructure on the view will reduce as planting matures. It is also acknowledged that this screen planting will itself have an impact on the currently open view. The scale of change is judged to be medium. The geographical extent is judged to be small. The magnitude of impact is judged to be medium at year 15. Taking account of the medium-high sensitivity, effects at year 15 are judged to be moderate adverse, which is significant in EIA terms.

Table 30.24 Viewpoint 4 - Little Bromley Road to west

Receptor	Viewpoint 4 - Little Bromley Road to west			
Grid Reference	607484	228723	Figure Number	30.2.4 (Document Reference: 3.2.26)
LCA	7A Bromley Heaths		Landscape Designation	N/A
Direction of View	East		Distance to the onshore substation	0.7km
Baseline Description	This viewpoint is located on Little Bromley Road, to the west of the onshore substation works area. 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 works area. The view looks over flat arable farmland. Direct views into the onshore substation works area are screened by a hedgerow, with occasional trees, along Grange Road. 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 works area.			
Sensitivity	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 sensitivity of receptors at this viewpoint is judged to be medium-low.			

Receptor	Viewpoint 4 - Little Bromley Road to west
Construction/ Decommissioning Effects	During construction, middle distance views to the east (0.7km) 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. 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 Little Bromley Road. The magnitude of impact during construction is judged to be medium-low. Taking account of the medium-low sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms. During winter, when intervening trees and hedgerows are not in leaf, there will be a slight reduction in screening. However, the overall level of screening (and associated effects) will remain similar.
Operational Effects (year 1)	Refer to ES Figure 30.2.4b and c (Document Reference: 3.2.26). Once operational, middle distance views to the east (0.7km) 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 onshore substation, 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 Lawford 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. The scale of change is judged to be medium-small. The geographical extent is judged to be small. The magnitude of impact is judged to be medium-low at year 1. Taking account of the medium-low sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms. During winter, when intervening trees and hedgerows are not in leaf, there will be a slight reduction in screening. However, the overall level of screening (and associated effects) will remain similar.
Operational Effects (year 15)	By year 15, landscape mitigation planting (refer to ES Figure 30.1.6 (Document Reference: 3.2.26), including native woodland, trees and hedgerows) around the onshore substation will have become established. This will add to the existing screening along Grange Road, helping to soften and screen views of the substation and integrate it into the landscape. Taller vertical components may still be visible, seen on the skyline above maturing landscape mitigation, but will not be intrusive features in the view. As such, the influence of electricity infrastructure on the view will reduce as planting matures. The scale of change is judged to be small. The geographical extent is judged to be small. The magnitude of impact is judged to be low at year 15. Taking account of the medium-low sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms.

Table 30.25 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 (Document Reference: 3.2.26)
LCA	7A Bromley Heaths		Landscape Designation	N/A
Direction of View	North-east		Distance to the onshore substation	0.9km
Baseline Description	This viewpoint is located on a PRoW to the north of Lilley's Farm, to the south-west of the onshore substation works area. It is representative of direct views from the footpath, looking north-east towards the onshore substation works area. The view looks over flat arable farmland. Direct views into the onshore substation works area 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 onshore substation works area. 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.			
Sensitivity	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 sensitivity of receptors at this viewpoint is judged to be medium.			
Construction/ Decommissioning Effects	During construction, middle distance views to the north-east (0.9km) 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. The scale of change is judged to be medium-small. 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. The magnitude of impact during construction 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. During winter, when intervening trees and hedgerows are not in leaf, there will be a slight reduction in screening. However, the overall level of screening (and associated effects) will remain similar.			
Operational Effects (year 1)	Refer to ES Figure 30.2.5b and c (Document Reference: 3.2.26). Once operational, middle distance views of the onshore substation will be available to the north-east (0.9km), seen behind and partially above intervening vegetation in field boundaries to the south of Ardleigh Road. 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. The scale of change is judged to be medium-small. The geographical extent is judged to be small. The magnitude of impact is judged to be medium-low at year 1. Taking account of the medium sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms. During winter, when intervening trees and hedgerows are not in leaf, there will be a slight reduction in screening. However, the overall level of screening (and associated effects) will remain similar.			

Receptor	Viewpoint 5 - PRoW near Lilley's Farm (PRoW 172_15)
Operational Effects (year 15)	By year 15, and as landscape mitigation planting (refer to Figure 30.1.6 (Document Reference: 3.2.26)), including native woodland, trees and hedgerows, around the onshore substation becomes established, it will help to soften and screen views of this feature and integrate it into the landscape. Taller vertical components will still be visible, seen on the skyline above maturing landscape mitigation and behind existing intervening vegetation. As such, the influence of electricity infrastructure on the view will reduce as planting matures. The scale of change is judged to be small. The geographical extent is judged to be small. The magnitude of impact is judged to be low at year 15. Taking account of the medium sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms.

Table 30.26 Viewpoint 6 - Grange Road to north

Receptor	Viewpoint 6 – Grange Road to north			
Grid Reference	609147	230544	Figure Number	30.2.6 (Document Reference: 3.2.26)
LCA	7A Bromley Heaths		Landscape Designation	N/A
Direction of View	South-west		Distance to the onshore substation	1.6km
Baseline Description	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 works area. The view looks over flat arable farmland. Direct views into the onshore substation works area are screened by intervening vegetation including hedgerows and trees along Barn Lane. 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 onshore substation works area.			
Sensitivity	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 sensitivity of receptors at this viewpoint is judged to be medium.			
Construction/ Decommissioning Effects	During construction, middle distance views of construction activity and plant may be available to the south-west (1.6km), seen behind and above intervening vegetation (including trees and hedgerows along Barn Lane and in field boundaries to the north). This vegetation will help to screen much of the 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. 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. The magnitude of impact during construction 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. During winter, when intervening trees and hedgerows are not in leaf, there will be a slight reduction in screening. However, the overall level of screening (and associated effects) will remain similar.			

Receptor	Viewpoint 6 – Grange Road to north
Operational Effects (year 1)	Refer to ES Figure 30.2.6b and c (Document Reference: 3.2.26). Once operational, middle distance views of the onshore substation may be available to the south-west (1.6km), seen behind and above intervening vegetation (including trees and hedgerows along Barn Lane and in field boundaries to the north). This vegetation will help to screen features such as security fencing and operational components in the onshore substation. The level of visibility will change as road users move along Grange Road, with hedgerow to the south and east of the road providing screening. The scale of change is judged to be medium-small. The geographical extent is judged to be small. The magnitude of impact is judged to be low at year 1. Taking account of the medium sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms. During winter, when intervening trees and hedgerows are not in leaf, there will be a slight reduction in screening. However, the overall level of screening (and associated effects) will remain similar.
Operational Effects (year 15)	By year 15, and as landscape mitigation planting (refer to ES Figure 30.1.6 (Document Reference: 3.2.26), including native woodland, trees and hedgerows, around the onshore substation becomes established, it will help to soften and screen views of this feature and integrate it into the landscape. Taller vertical components will still be visible, seen on the skyline above maturing landscape mitigation and behind existing intervening vegetation. As such, the influence of electricity infrastructure on the view will reduce as planting matures. The scale of change is judged to be small. The geographical extent is judged to be small. The magnitude of impact is judged to be low at year 15. Taking account of the medium sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms.

Table 30.27 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 (Document Reference: 3.2.26)
LCA	7A Bromley Heaths		Landscape Designation	N/A
Direction of View	North-west		Distance to the onshore substation	1.2km
Baseline Description	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 works area. The view looks over flat arable farmland. Direct views into the onshore substation works area 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 (south-east) of the onshore substation works area. The existing substation on Ardleigh Road, surrounded by mature woodland, is just visible to the left of the onshore substation works area (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 works area.			
Sensitivity	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.			

Receptor	Viewpoint 7 – PRoW near Little Bromley Hall (PRoW 172_14 and 172_16)
	The sensitivity of receptors at this viewpoint is judged to be medium.
Construction/ Decommissioning Effects	During construction, middle distance views to the north-west (1.2km) of construction activity and plant will be available, seen behind and between intervening vegetation in field boundaries to the south of Ardleigh Road. This vegetation, which includes mature field boundary trees, will help to partially screen construction activity. 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. The magnitude of impact during construction 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. During winter, when intervening trees and hedgerows are not in leaf, there will be a slight reduction in screening. However, the overall level of screening (and associated effects) will remain similar.
Operational Effects (year 1)	Refer to ES Figure 30.2.7b and c (Document Reference: 3.2.26). During operation, middle distance views to the north-west (1.2km) of the onshore substation will be available, seen partially on the skyline behind and between intervening trees and vegetation in field boundaries to the south of Ardleigh Road. This vegetation will help to screen views of large parts of the substation infrastructure. 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. The magnitude of impact is judged to be medium-low at year 1. Taking account of the medium sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms. During winter, when intervening trees and hedgerows are not in leaf, there will be a slight reduction in screening. However, the overall level of screening (and associated effects) will remain similar.
Operational Effects (year 15)	By year 15, landscape mitigation planting (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)), including native woodland, trees and hedgerows, around the onshore substation will have become established. This will help to soften and screen views of the substation and integrate it into the landscape. Taller vertical components will still be visible, seen on the skyline above maturing landscape mitigation and between existing intervening mature field boundary trees. As such, the influence of electricity infrastructure on the view will reduce as planting matures. The scale of change is judged to be small. The geographical extent is judged to be small. The magnitude of impact is judged to be low at year 15. Taking account of the medium sensitivity, effects are judged to be minor adverse, which is not significant in EIA terms.

Table 30.28 Viewpoint 8 – Essex Way, Dedham Road

Receptor	Viewpoint 8 – Essex Way, Dedham Road			
Grid Reference	608071	231561	Figure Number	30.2.8 (Document Reference: 3.2.26)
LCA	7A Bromley Heaths		Landscape Designation	Dedham Vale National Landscape
Direction of View	South		Distance to the onshore substation	2.4km

Receptor	Viewpoint 8 – Essex Way, Dedham Road
Baseline Description	This viewpoint is located on the Essex Way long-distance path, where it follows a minor road (Dedham Road). It Is to the north of the onshore substation works area, on the north side of the A137 which is the boundary of the Dedham Vale National Landscape. It is representative of views from the footpath and road, looking south towards the onshore substation works area. The view looks south across an open arable field, within which there are wood pole and steel tower overhead power lines. Field boundary trees are seen in the middle distance. Across the fields, houses along the A137 can be seen. More distant views towards the onshore substation works area are obscured by these houses, or by layers of field boundary trees and hedges which build up to filter long views. Some larger scale steel tower electricity pylons rise above these layers of trees.
Sensitivity	Recreational users of this section of the long-distance walk are considered to be of medium-high susceptibility. The viewpoint is located in a designated landscape, indicating higher value. The sensitivity of receptors at this viewpoint is judged to be medium-high.
Construction/ Decommissioning Effects	During construction, taller features 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. The scale of change is judged to be barely perceptible. The geographical extent is judged to be small, as similar views will only be experienced along a short section of this route. The magnitude of impact at construction is judged to be negligible. Taking account of the high sensitivity, effects are judged to be negligible, which is not significant in EIA terms.
Operational Effects	Refer to ES Figure 30.2.8b and c (Document Reference: 3.2.26). Once operational, intervening vegetation will screen the onshore substation (maximum height of components within the onshore substation operational footprint is 18m). The magnitude of impact is judged to be negligible at year 1. Taking account of the high sensitivity, effects are judged to be negligible, which is not significant in EIA terms.

30.6.5.2 Visual effects arising from the landfall and onshore cable route

101. 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 onshore cable route.

102. As the export cable will be underground (and areas of woodland will be avoided and any hedgerows replaced) operational visual effects are not likely to be significant and have not been considered in detail.

103. Given the short term, reversible and transient nature of construction effects associated with the onshore export cable and landfall, representative viewpoints and visualisations are not presented for the landfall and onshore cable route.

104. People accessing Holland Haven Country Park, using the coastal PRoW and beaches, and using Frinton Golf Course, may all experience views of the landfall construction works. There will be no direct disturbance to the beach, foreshore, golf course or Country Park, as the cables will be brought onshore

via trenchless techniques. The onshore landfall compound will be located over 350m inland, and views experienced by recreational receptors will be limited. Views of vessels operating in the near-shore area during cable pulling will also be available.

105. For certain residents in close proximity to the cable route, views of temporary disturbance to farmland, hedgerows/ field boundaries and road surfaces may be available. This is likely to be the case for some residents in outer parts of the settlements of Great Holland, Thorpe-le-Soken, Thorpe Green, Tendring Green and Tendring Heath. The route of the onshore export cable and landfall has sought to avoid larger settlements, which will help to minimise the number of residents affected.

106. For recreational users of the PRoW network (the onshore cable route crosses approximately 15 PRoWs), there will also be close proximity views of temporary disturbance to farmland, hedgerows and field boundaries. As noted in Table 30.3, North Falls has committed to seeking to use trenchless techniques (e.g. HDD) where practicable at all key sensitive linear features, including 'important' hedgerows. This will help to limit visual effects along the onshore cable route associated with vegetation clearance.

107. For road users (the onshore cable route crosses approximately 22 roads, plus it also crosses one railway) there will also be close proximity views of temporary disturbance to farmland, hedgerows/ field boundaries and road surfaces. Trenchless techniques will help to limit disturbance to road surfaces, where trenchless techniques are used to cross these features (and cross the railway line).

108. During construction, high sensitivity receptors including recreational users and residents will experience up to a medium magnitude of impact in their view, where they are located within 500m or less of the landfall or main cable installation works. Impacts will occur across a small extent of the view, and will be short-term and reversible. Up to moderate effects are predicted on high sensitivity visual receptors at the landfall and onshore cable route, which is significant in EIA terms.

109. Once operational, the scale of visual change for all receptors groups (residents, recreational and transport receptors) will be barely perceptible, and visual effects are judged to be negligible, which is not significant in EIA terms.

110. Any sections of hedgerow temporarily removed during construction of the onshore export cables will be reinstated. It is noted that canopy tree species cannot be replanted within 6m of the buried cables. This will restrict tree planting for a 37m swathe during hedgerow reinstatement. Locations for replacement tree planting will be identified prior to construction. Hedgerows and new tree planting will take some time to re-establish, so localised effects associated with hedgerow reinstatement will be of medium duration (and subject to a 10 year aftercare period).

111. Longer term operational visual 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 landfall.

30.6.6 Residual effects

112. The landscape and visual mitigation is discussed in the Design Vision Document () and is shown on the Landscape Mitigation Plan (ES Figure 30.1.6 (Document Reference: 3.2.26)). Landscape mitigation proposals will be secured through a DCO requirement and an Outline Landscape and Ecological Management Strategy (OLEMS) (Document Reference: 7.14) which details long term management. The Landscape Mitigation Plan is considered to be embedded mitigation but it is recognised that the planting will not provide effective mitigation from year 1.

113. As outlined in the year 15 landscape and visual assessments provided above, maturing landscape mitigation (including areas of native woodland planting and hedgerows) will assist in integrating the onshore substation into the wider landscape fabric of farmland, hedgerows and areas of woodland helping to reduce the level of impact on certain landscape and visual receptors. Whilst maturing planting helps to reduce certain landscape and visual impacts, localised residual landscape and visual effects will remain significant for certain receptors, as summarised in Table 30.34.

30.7 Potential monitoring requirements

114. Details of long-term monitoring of the landscape mitigation, for maintenance purposes, are set out in the OLEMS (Document Reference: 7.14).

30.8 Cumulative effects

30.8.1 Identification of potential cumulative effects

115. 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 landscape and visual effects with other plans, projects, and activities.

116. The cumulative landscape and visual assessment focuses on construction-stage impacts, and operational impacts of the permanent above ground onshore components of the Project. As the onshore export cable will be underground, operational cumulative interactions with this component are not anticipated.

117. 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; the 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 ES Chapter 29 SLVIA (Document Reference: 3.1.31).

30.8.2 Other plans, projects, and activities

118. 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

30.29 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.

119. 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.

120. Cumulative interactions with projects scoped into the cumulative assessment, as set out in Table 30.29, are considered in the cumulative assessment (see Table 30.32).

Table 30.29 Screening of projects considered in the CEA in relation to Landscape and Visual

Project	Status	Construction period	Closest distance from the onshore project area (km)	Confidence in data	Included in the CEA (Y/N)	Rationale
National Infrastructure Planning						
Five Estuaries Offshore Wind Farm	Pre-application	2028 - 2030	Five Estuaries Offshore Wind Farm onshore project area overlaps with North Falls onshore project area.	High – DCO application submitted	**Yes**	The onshore project area for Five Estuaries Offshore Wind Farm covers largely the same area as North Falls. There is also a possibility that both projects could be constructed at around the same time, therefore, likely significant cumulative effects may occur.
Norwich to Tilbury	Pre-application	2027 - 2031	Overlaps with North Falls onshore project area.	Medium – PEIR submitted	**Yes**	The proposed substation area for Norwich to Tilbury is in close proximity to North Falls onshore substation. Therefore, likely significant cumulative effects may occur.
East Anglia TWO Offshore Windfarm	Approved (DCO Issued 2022)	Mid 2020s	47	High	No	The infrastructure for these projects is outside the 2km LVIA study area, and there is no potential for a likely significant cumulative effect.
Bradwell B new nuclear power station	Pre-application	Predicted 9 – 12 years	21	High	No	
Ipswich Rail Chord	Approved (DCO issued 2012)	Built	17	High	No	
Sizewell C Project	Approved (DCO issued 2022)	2022 – 2034	49	High	No	
Nautilus Interconnector	Pre-application	Information unavailable	44	Medium	No	
Lake Lothing Third Crossing	Approved (DCO issued 2020)	Over 2 years	76	High	No	
Richborough Connection Project	Approved (DCO issued 2017)	Built	55	High	No	
Manston Airport	Information unavailable	Information unavailable	53	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
Kentish Flats Extension	Approved (DCO issued 2013)	Built	46	High	No	
Sea Link	Pre-application	Information unavailable	20	N/A	No	
Galloper Offshore Windfarm	Approved	Built	15	High	No	
A12 Chelmsford to A120 widening scheme	Pre-examination	Information unavailable	27	Medium	No	
Rivenhall IWMF and Energy Centre	Pre-application	Information unavailable	27	Medium	No	
Essex County Council						
Elmstead Hall, Elmstead, Colchester, Essex	Approved	Information unavailable.	5	N/A	No	The infrastructure for these projects is outside the 2km LVIA study area, , and there is no potential for a likely significant cumulative effect.
St. George's Infant School and Nursery, Barrington Road, Colchester, Essex, CO2 7RW	Approved	Information unavailable	9	N/A	No	
Wilson Marriage Centre, Barrack Street, Colchester, Essex, CO1 2LR	Approved	Information unavailable	9	N/A	No	
Wivenhoe Quarry Alresford Road, Wivenhoe, Essex, CO7 9JU	Report being prepared	Information unavailable	7	N/A	No	
Elmstead Hall, Elmstead, Colchester, Essex, CO7 7AT	Approved	Information unavailable.	5	N/A	No	
Elmstead Hall, Elmstead, Colchester, Essex, CO7 7AT	Approved	Information unavailable.	5	N/A	No	
Old Heath County Primary School, Old Heath Road, Colchester, Essex, CO2 8DD	Approved	Information unavailable.	8	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
Crown Quarry (Wick Farm), Old Ipswich Road, Ardleigh, CO7 7QR	Approved	Information unavailable.	6	N/A	No	
Wivenhoe Quarry, Alresford Road Wivenhoe, Essex CO7 9JU	Approved	Information unavailable.	7	N/A	No	
Martell's Quarry, Slough Lane, Ardleigh, Essex, CO7 7RU	Out for consultation	Information unavailable	3	N/A	No	
Land at: Elmstead Hall, Elmstead, Colchester, Essex	Approved	Information unavailable.	5	N/A	No	
Land at Martells Quarry, Slough Lane, Ardleigh, Essex, CO7 7RU	Approved	Information unavailable.	3	N/A	No	
Land to the south of Colchester Main Road, Alresford, Colchester, CO7 8DB	Report being prepared	Information unavailable	6	N/A	No	
Land at: Martells Quarry, Slough Lane, Ardleigh, Essex, CO7 7RU	Approved	Information unavailable	3	N/A	No	
Tendring Education Centre, Jaywick Lane, Clacton on Sea, Essex, CO16 8BE	Approved	Information unavailable.	6	N/A	No	
Tendring Education Centre, Jaywick Lane, Clacton on Sea, Essex, CO16 8BE	Approved	Information unavailable.	6	N/A	No	
Land At Martells's Quarry, Slough Lane, Ardleigh, Essex CO7 7RU	Approved	Information unavailable.	3	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
Land At Martells's Quarry, Slough Lane, Ardleigh, Essex CO7 7RU	Approved	Information unavailable.	3	N/A	No	
Crown Quarry (Ardleigh Reservoir Extension), Wick Farm, Old Ipswich Road, Tendring, Colchester, CO7 7QR	Approved	Information unavailable.	3	N/A	No	
Elmstead Hall, Elmstead, Colchester, Essex	Approved	Information unavailable.	6	N/A	No	
Ardleigh Waste Transfer Station, A120, Ardleigh, Colchester, CO7 7SL	Approved	Information unavailable.	5	N/A	No	
35 Roach Vale, Colchester, CO4 3YN	Approved	Information unavailable.	4	N/A	No	
Boxted Bridge, Boxted, Essex, CO4 5TB	Report being prepared	Information unavailable	9	N/A	No	
Elmstead Hall, Elmstead, Colchester, Essex	Approved	Information unavailable.	6	N/A	No	
Lufkins Farm, Great Bentley Road, Frating CO7 7HN	EIA not required	Information unavailable.	6	N/A	No	
Lufkins Farm, Great Bentley Road, Frating CO7 7HN	Resolution made/ awaiting legal agreement	Information unavailable.	6	N/A	No	
Elmstead Hall, Elmstead, Colchester	Approved	Information unavailable.	5	N/A	No	
Elmstead Hall, Elmstead, Colchester, CO7 7EX	Approved	Information unavailable.	5	N/A	No	
Tendring District Council						

Project	Status	Construction period	Closest distance from the onshore project area (km)	Confidence in data	Included in the CEA (Y/N)	Rationale
Land Between the A120 and A133, To The East of Colchester and of Elmstead Market	Awaiting decision	Information unavailable.	3	N/A	No	The infrastructure for these projects is outside the 2km LVIA study area, and there is no potential for a likely significant cumulative effect
Hamilton Lodge Parsons Hill Great Bromley Colchester Essex CO7 7JB	Approval- outline	Information unavailable.	2	N/A	No	
Land adjacent to Lawford Grid Substation Ardleigh Road Little Bromley Essex CO11 2QB	Approved	Information unavailable.	0.3	Medium – information from approved planning application	**Yes**	Include. Within 2km LVIA study area, and likely significant cumulative effects may occur.

30.8.3 Assessment of cumulative effects

121. Following a review of projects (presented in Table 30.29) 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 listed below and are shown on ES Figure 30.1.5 (Document Reference: 3.2.26):

- Five Estuaries Offshore Wind Farm ('Five Estuaries') (onshore substation). Five Estuaries is also in its application phase, having submitted a DCO to the Planning Inspectorate for the project, which was accepted on 22 April 2024.;
- NGET Norwich to Tilbury Project (substation and 400kV overhead lines); 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').

122. The cumulative landscape and visual effects between the onshore substation and these three projects are considered further in this section.

123. Both NFOW and Five Estuaries Offshore Wind Farm Limited (VEOWL) are working together to coordinate plans for a co-located onshore substations, including a common set of design principles that will guide the detailed design of both projects (refer to ES Figure 30.1.5 (Document Reference: 3.2.26)). As such, this chapter provides a landscape and visual impact assessment of the proposed North Falls onshore substation in this context. The 'North Falls plus Five Estuaries' assessment scenario considers a theoretical future baseline which includes the proposed operational Five Estuaries onshore substation. This is set out in Section 30.8.3.1.

124. In terms of wider cumulative effects, the cumulative LVIA also considers the potential likely significant effects of the addition of North Falls, against a landscape baseline that includes all the developments listed above, which may or may not be present in the landscape in the future. The future developments are assumed to be present in the landscape for the purposes of the cumulative LVIA. This is set out in Section 30.8.3.2.

125. The methodology for the cumulative assessment follows that of the LVIA (see Section 30.4 and ES Appendix 29.1 (Document Reference: 3.3.69)), and considers the introduction of a proposed development to a baseline which includes existing as well as proposed 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.

30.8.3.1 Five Estuaries Offshore Wind Farm

30.8.3.1.1 Realistic worst-case scenario

126. Using the design information provided by Five Estuaries Offshore Wind Farm Limited (and checked/updated against the submission of the Five Estuaries ES), a realistic worst case cumulative scenario has been developed for the purposes of this chapter.

127. This considers three potential cumulative build-out scenarios, as outlined in ES Chapter 5 Project Description (Document Reference: 3.1.7):

- Scenario 1: North Falls 'Option 2' build out is progressed, and Five Estuaries Offshore Wind Limited undertakes landfall, onshore substation construction, ducting and cable pull which overlaps with North Falls equivalent works. In this scenario, onshore cable route associated works, including temporary construction compounds, accesses and haul road, all remain in place and are used by the second project during its construction.
- Scenario 2: North Falls 'Option 1' build out is progressed, and Five Estuaries Offshore Wind Limited undertakes landfall, onshore substation and onshore cable route construction and cable pull, all of which does not overlap with North Falls' equivalent works. There would be a gap of between 1 and 3 years between each Projects' construction. In this scenario, onshore cable route associated works, including temporary construction compounds, accesses and haul road, all remain in place and are used by the second project during its construction.
- Scenario 3: North Falls 'Option 1' build out is progressed, and Five Estuaries Offshore Wind Limited undertakes a separate landfall, onshore substation and onshore cable route construction and cable pull, using the same locations but with a multi-year (i.e. >3 year) gap between the two construction activities. In this scenario, there is no reuse in onshore temporary works between the two projects, and all onshore cable route associated works are rebuilt and reinstated in full by the second project.

128. Full details on the build out scenarios considered within this assessment are detailed in ES Chapter 5 Project Description (Document Reference: 3.1.7) and ES Chapter 6 EIA Methodology (Document Reference: 3.1.8).

129. The realistic worst-case scenario for likely cumulative effects scoped into the EIA for the onshore LVIA is summarised in Table 30.30. This relates to Scenario 3, independent build, and is based on project parameters for Five Estuaries Offshore Wind Farm described in ES Chapter 5 Project Description (Document Reference: 3.1.7), which provides further details regarding scenarios, specific activities and their durations. Where parameters are the same as the North Falls alone scenario, these are not repeated but can be found in Table 30.2.

130. The Five Estuaries onshore substation has been modelled into the visualisations contained in Volume 3.2, using a 3D model provided by Five Estuaries Offshore Wind Limited.

Table 30.30 Realistic worst-case scenarios (Cumulative effects arising from development of North Falls and Five Estuaries - Scenario 3 (Independent build))

Element of the Project infrastructure	Parameter	Notes
Construction		
Impacts relating to the landfall	Landfall HDD (temporary works) physical parameters: • Maximum No. of Transition Joint Bays (TJB) = 4 • TJB dimensions = 4 x 15 for the Project, 5 x 20m for Five Estuaries • HDD temporary works area = 150 x 300m	Landfall works compound will be co-located. Parameters given are those which are larger in the cumulative scenario. Duration includes compound establishment, HDD, transition bays, and reinstatement.
	Duration: • 13 months (of which HDD = 6 months) + 13 months (of which HDD = 6 months)	
Impacts relating to the onshore cable route	Cable route construction physical parameters are identical to those set out in the North Falls alone scenario in Table 30.2.	Overall duration includes establishing / reinstating temporary construction compounds and haul roads, cable installation (trench excavation, duct installation, cable jointing), trenchless crossings (includes compound establishment, trenchless crossings works (e.g. HDD), and reinstatement).
	Durations: • Cable route works = 18 – 27 months per project, with a 57 month gap in between i.e. 111 months start to finish, including: • Cable installation = 12 months per project, i.e. 24 months • Major trenchless techniques (each location) = 8 months per project (of which trenchless techniques = 4 months per project) • Minor trenchless crossings = 2 months per project	
Impacts relating to the onshore substation and unlicensed works	Onshore substation (temporary works) physical parameters: • Indicative area of the substations = 280 x 210m (North Falls) + 280 x 210m (Five Estuaries) • Construction compound footprint = 250 x 150m (North Falls) + 250 x 150m (Five Estuaries)	Substation compound will be co-located. Parameters given are those which are larger in the cumulative scenario.
	Duration: • Substation construction duration = 21 - 27 months per project, i.e. 54 months	
Operation		

Element of the Project infrastructure	Parameter	Notes
Impacts relating to the onshore cable route	Cable route operational physical parameters: • No. of link boxes = up to 192	
Impacts relating to the onshore substation	Onshore substation physical parameters: North Falls: • Maximum structure height = 18m (lightning rods) • Maximum equipment height = 13m (switchgear) • Maximum building height = 7m • Maximum permanent substation footprint = 280 x 210m Five Estuaries: • Maximum structure height: 18m (lightning rods) • Maximum building height = 15m • Maximum permanent substation footprint = 280 x 210m • A joint mitigation plan will be developed and implemented around the co-located substations. This will be based on principles set out in the OLEMS (Document Reference: 7.14) and is indicatively shown in ES Figure 30.1.6 (Document Reference: 3.2.26).	Normal operating conditions would not require lighting at the onshore substation, although low level movement detecting security lighting may be utilised for health and safety purposes. Temporary lighting during working hours would be provided during maintenance activities only. Low level continuous noise emissions would also be generated by the onshore substation during operation.

30.8.3.1.2 Assessment of Cumulative Effects – North Falls + Five Estuaries

Table 30.31 Cumulative Landscape and Visual Effects – North Falls + Five Estuaries

Landscape or Visual Receptor	Sensitivity	Cumulative Effects: North Falls + Five Estuaries
Onshore substation works area	Medium-low	Cumulative effects associated with the construction and operation of the proposed North Falls onshore substation, adjacent to the proposed Five Estuaries onshore substation, will locally intensify the (construction and operational) effects of electricity infrastructure on the landscape character of the onshore substation works area. However, the overall level of effect will be similar to that as assessed above given that the proposed Five Estuaries Project will have influenced character. As the joint landscape mitigation proposals (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)) mature, they will help to soften and screen views of these features and integrate them into the landscape.

Landscape or Visual Receptor	Sensitivity	Cumulative Effects: North Falls + Five Estuaries
		Under this scenario, and for construction, year 1 and year 15, effects will remain similar to those identified in the North Falls only assessment scenario (moderate adverse, which is significant in EIA terms).
7A Bromley Heaths LCA (Heathland Plateaux LCT)	Medium	Cumulative effects associated with the construction and operation of the proposed North Falls onshore substation and cable route, adjacent to the proposed Five Estuaries onshore substation and cable route, will locally intensify the (construction and operational) effects of electricity infrastructure on the landscape character of the onshore substation works area and a very localised areas of this LCA. However, the overall level of effect will be similar to that as assessed above given that the proposed Five Estuaries Project will have influenced character. As the joint landscape mitigation proposals (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)) mature, they will help to soften and screen views of these features and integrate them into the landscape. Under this scenario, and for construction, year 1 and year 15, effects will remain similar to those identified in the North Falls only assessment scenario (moderate adverse (significant) locally and minor adverse (not significant) more widely at construction and year 1, reducing to minor and not significant at year 15).
Viewpoint 1 - Court Farm, Stutton Road	High	Due to distance and screening by intervening vegetation and lack of visibility of both the North Falls and Five Estuaries onshore substations, or construction works, no significant cumulative effects are anticipated.
Viewpoint 2 - Bridleway at Barn Lane	Medium	Construction works across both projects will be visible to the south-west, with part of the foreground view becoming a construction site when seen in gaps through hedgerows. The proposed North Falls onshore substation will be seen directly in front of the proposed Five Estuaries onshore substation from this location. Visibility of the Five Estuaries onshore substation will therefore be limited. As the joint landscape mitigation proposals (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)) mature, they will help to soften and screen views of these features and integrate them into the view. Under this scenario, effects are judged to be moderate adverse (significant) at construction and year 1, reducing to minor adverse (not significant) at year 15.
Viewpoint 3 - Norman's Farm	Medium-high	Construction works across both projects will be visible at close range on both sides of the road, with much of the foreground view becoming a construction site including cable trenching, access roads, drainage construction and compounds as well as the under-construction substations. The proposed North Falls onshore substation will be seen immediately to the north-east (right in the view) of the proposed Five Estuaries onshore substation from this location. Their appearance side by side will intensify the industrialising effects of electricity infrastructure on the view. The contrast in form of the two substations will be apparent, with

Landscape or Visual Receptor	Sensitivity	Cumulative Effects: North Falls + Five Estuaries
		the complex open infrastructure of North Falls seen alongside the bulky main buildings of Five Estuaries. As the joint landscape mitigation proposals (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)) mature, they will help to soften and screen views of these features. In this particular view, nearby planting will entirely block views of Five Estuaries, although it will be visible to some extent elsewhere along this road. It is also acknowledged that the screen planting itself will have an effect on the view. Under this scenario, cumulative effects are judged to be major adverse (significant) at construction and year 1, reducing to moderate adverse (significant) at year 15.
Viewpoint 4 - Little Bromley Road to west	Medium-low	Construction works across both projects will be seen behind and above intervening hedgerow cover on Grange Road, which will screen low-level construction activity and ground disturbance. From this location, the proposed Five Estuaries onshore substation will be seen in front of the more distant North Falls onshore substation. At year 1 the large main buildings of Five Estuaries will be clearly visible above the hedge on Grange Road. Although more infrastructure may be visible in this scenario, it will not occupy a larger extent of the view. As the joint landscape mitigation proposals (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)) mature, they will help to soften and screen views of the substations. The upper parts of the large Five Estuaries buildings will remain visible, but will be more integrated into the view. Under this scenario, effects are judged to be minor adverse (not significant) at construction and year 1 and at year 15.
Viewpoint 5 - PRoW near Lilley's Farm	Medium	Construction works across both projects will be visible, partially screened by intervening vegetation and field boundaries to the south of Ardleigh Road. Construction works will be more visible as recreational users move north along the PRoW. The proposed Five Estuaries onshore substation will be seen to the south-west (left in the view) of the North Falls onshore substation. Due to a gap in vegetation from this viewpoint, the Five Estuaries substation will be clearly visible across the fields. Although side by side in the view, intervening vegetation breaks up the extent of infrastructure that is visible. The joint landscape mitigation proposals (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)) include woodland planting to the south of the substations. By year 15 this will be maturing, and will further screen the North Falls onshore substation, as well as helping to screen the lower parts of the Five Estuaries onshore substation. Under this scenario, effects are judged to be moderate adverse (significant) at construction and year 1 and minor adverse (not significant) at year 15.

Landscape or Visual Receptor	Sensitivity	Cumulative Effects: North Falls + Five Estuaries
Viewpoint 6 - Grange Road to north	Medium	Construction works across both projects may be visible to the south-west, though seen behind and above intervening vegetation which will screen much of the low-level activity. The proposed North Falls onshore substation will be seen alongside to the north-east (left in the view) of the proposed Five Estuaries onshore substation. Five Estuaries substation would be seen to the right of the overhead power line in the view. Existing trees in the foreground and middle distance screen this substation, though one of the main buildings would be visible. The presence of this substation will add to the appearance of infrastructure in the view, though North Falls substation will remain the larger feature. The joint landscape mitigation proposals (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)) include woodland which will help to soften and screen views of these features and integrate them into the view. Taller parts of both substations will remain visible above this planting. Under this scenario, effects are judged to be minor adverse (not significant) at construction and year 1 and at year 15.
Viewpoint 7 – PRoW near Little Bromley Hall	Medium	Construction works across both projects will be visible to the north-west, with views filtered between field boundary vegetation to the south of Ardleigh Road. From this location, the proposed Five Estuaries onshore substation will be seen to the south-east (left in the view) of North Falls onshore substation. The large main building of Five Estuaries will be seen directly behind and above Norman's Farm. Intervening trees will screen some of the rest of this substation, though views of infrastructure and fencing will be seen between. As the joint landscape mitigation proposals (refer to ES Figure 30.1.6 (Document Reference: 3.2.26)) mature, they will further screen the lower parts of the infrastructure. Taller elements including the North Falls busbars and Five Estuaries main building above Norman's Farm will remain visible. Under this scenario, effects are judged to be minor adverse (not significant) at construction and year 1 and at year 15.
Viewpoint 8 – Essex Way, Dedham Road	Medium-high	Due to screening by intervening vegetation and lack of visibility of either the North Falls or Five Estuaries onshore substations, or construction works, no significant cumulative effects are anticipated.
Visual receptors along the onshore cable route	Up to High	Along the landfall and onshore cable route, the main cumulative impact will be the extended duration of the works, arising from first one then the second projects carrying out installation of underground cables. The combined works will not affect a larger area than the project alone. Under this scenario, effects are judged to be moderate adverse (significant) at construction, and negligible (not significant) at year 1 and year 15.

30.8.3.2 North Falls, Five Estuaries and other projects

131. Based on the project screening in Table 30.29, two of the other listed projects have been included in the CEA for further assessment: Norwich to Tilbury substation and overhead line; and the Little Bromley BESS. The locations of these projects are shown in ES Figure 30.1.5 (Document Reference: 3.2.26).

132. Indicative data provided by National Grid has been used to model a parameter box showing the likely extent of the Norwich to Tilbury Project substation, which is also shown in the visualisations in Volume 3.2.

30.8.3.2.1 Assessment of Cumulative Effects – North Falls + All Projects

Table 30.32 Cumulative Landscape and Visual Effects – North Falls + All Projects

Landscape or Visual Receptor	Sensitivity	Cumulative Effects – North Falls + All Projects
7A Bromley Heaths LCA (Heathland Plateaux LCT)	Medium-low	Cumulative effects associated with the construction and operation of the proposed North Falls onshore substation and cable route, alongside the Five Estuaries and Norwich to Tilbury Project substations, Norwich to Tilbury overhead lines, and the consented Little Bromley BESS will intensify the (construction and operational) effects of electricity infrastructure in a localised area of this LCA. These effects will be focused approximately 1km to the west of Little Bromley (refer to ES Figure 30.1.5 (Document Reference: 3.2.26)). 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 onshore substation will be located in an area of the LCA which has been altered by electricity infrastructure, through the existing Lawford substation south of Ardleigh Road, overhead power lines and, in a theoretical future baseline, Five Estuaries and Norwich to Tilbury Project substations and the consented Little Bromley BESS. Joint landscape mitigation proposals will be applied to the co-located North Falls and Five Estuaries substations. Similar mitigation principles will also be applied to the Norwich to Tilbury substation. The additional cumulative effects of the North Falls onshore substation in this scenario will be moderate adverse (significant) locally and minor adverse (not significant) more widely at construction and year 1, reducing to minor and not significant at year 15.
Viewpoint 1 - Court Farm, Stutton Road	High	Due to distance and screening by intervening vegetation, there will be no visibility of the North Falls onshore substation or any of the other projects, including construction works. No significant cumulative effects are anticipated.
Viewpoint 2 - Bridleway at Barn Lane	Medium	Construction works across all projects will be visible to the south-west, with part of the foreground view becoming a construction site when seen in gaps through hedgerows. The North Falls onshore substation will be seen directly in front of the proposed Five Estuaries onshore substation from this location. The Norwich to Tilbury substation will be seen behind this, with steel tower

Landscape or Visual Receptor	Sensitivity	Cumulative Effects – North Falls + All Projects
		overhead lines seen on the skyline above, in the context of existing power lines. Little Bromley BESS is unlikely to be visible behind the other substations and intervening vegetation. Joint landscape mitigation proposals will be applied to the co-located North Falls and Five Estuaries substations. This will reduce visibility of all substations, though Norwich to Tilbury overhead lines will remain visible. The additional cumulative effects of the North Falls onshore substation in this scenario will be moderate adverse (significant) at construction and year 1, reducing to minor adverse (not significant) at year 15.
Viewpoint 3 - Norman's Farm	Medium-high	Construction works across all projects will be visible at close range on both sides of the road, with much of the foreground view becoming a construction site including cable trenching, access roads, drainage construction and compounds as well as the under-construction substations. The proposed North Falls onshore substation will be seen immediately to the north-east (right in the view) of the proposed Five Estuaries onshore substation from this location. Their appearance side by side will intensify the industrialising effects of electricity infrastructure on the view. The contrast in form of the two substations will be apparent, with the complex open infrastructure of North Falls seen alongside the bulky main buildings of Five Estuaries. The effect will be further intensified by the Norwich to Tilbury substation, which will be seen behind Five Estuaries, with steel tower overhead lines on the skyline. Little Bromley BESS will not be visible as it is beyond the operational Lawford substation. Joint landscape mitigation proposals will be applied to the co-located North Falls and Five Estuaries substations, in the foreground of the view. This will reduce visibility of all substations, though Norwich to Tilbury overhead lines may remain visible from locations along Ardleigh Road. The additional cumulative effects of the North Falls onshore substation in this scenario will be major adverse (significant) at construction and year 1, reducing to moderate adverse (significant) at year 15.
Viewpoint 4 - Little Bromley Road to west	Medium-low	Construction works for the Norwich to Tilbury substation will be seen in the foreground to the north of Ardleigh Road. Construction works for North Falls and Five Estuaries will be seen behind and above intervening hedgerow cover on Grange Road, which will screen low-level construction activity and ground disturbance. Construction of the Little Bromley BESS will be seen in the foreground to the south side of Ardleigh Road. From this location, the Norwich to Tilbury substation will be seen in the immediate foreground. Five Estuaries onshore substation will be seen in front of the more distant North Falls onshore substation, both clearly visible above the hedge on Grange Road. The Little Bromley BESS will be visible to the south of Ardleigh Road. Infrastructure will occupy up to 270 degrees of the view from this particular location.

Landscape or Visual Receptor	Sensitivity	Cumulative Effects – North Falls + All Projects
		Joint landscape mitigation proposals will be applied to the co-located North Falls and Five Estuaries substations. It is assumed that similar principles will be applied to mitigating the Norwich to Tilbury substation, and therefore planting will partially mitigate the effects on this view. The additional cumulative effects of the North Falls onshore substation in this scenario will be minor adverse (not significant) at construction and year 1 and at year 15. This is due to the limited visibility of North Falls in the view, with the greater impact attributed to the Norwich to Tilbury substation at this location.
Viewpoint 5 - PRoW near Lilley's Farm	Medium	Construction works across North Falls and Five Estuaries will be visible, partially screened by intervening vegetation and field boundaries to the south of Ardleigh Road. Construction works will be more visible as recreational users move north along the PRoW. Construction of Norwich to Tilbury and Little Bromley BESS will be screened behind woodland around the Lawford substation. The proposed Five Estuaries onshore substation will be seen to the south-west (left in the view) of the North Falls onshore substation. Due to a gap in vegetation from this viewpoint, the Five Estuaries substation will be clearly visible across the fields. Although side by side in the view, intervening vegetation breaks up the extent of infrastructure that is visible. The Norwich to Tilbury substation and Little Bromley BESS will not be clearly visible, due to the intervening woodland. Steel tower overhead lines connecting in to the Norwich to Tilbury substation may be visible above the woodland, in the context of existing power lines around Lawford substation. Joint landscape mitigation proposals will be applied to the co-located North Falls and Five Estuaries substations, and by year 15 this will further screen the lower parts of these substations. The additional cumulative effects of the North Falls onshore substation in this scenario will be moderate adverse (significant) at construction and year 1 and minor adverse (not significant) at year 15.
Viewpoint 6 - Grange Road to north	Medium	Construction works across both projects may be visible to the south-west, though seen behind and above intervening vegetation which will screen much of the low-level activity. Construction of the more distant Norwich to Tilbury and Little Bromley BESS is unlikely to be visible. The proposed North Falls onshore substation will be seen alongside to the north-east (left in the view) of the proposed Five Estuaries onshore substation. Five Estuaries substation will be seen to the right of the overhead power line in the view. Norwich to Tilbury substation will be glimpsed further to the south-west (right in the view). Existing trees in the foreground and middle distance will screen the infrastructure. The steel tower overhead lines connecting in to Norwich to Tilbury substation will be visible on the skyline. Joint landscape mitigation proposals will be applied to the co-located North Falls and Five Estuaries substations, and by year 15 will help to soften and screen views of the substations and integrate them into the view. Overhead lines will remain visible.

Landscape or Visual Receptor	Sensitivity	Cumulative Effects – North Falls + All Projects
		The additional cumulative effects of the North Falls onshore substation in this scenario will be minor adverse (not significant) at construction and year 1 and at year 15.
Viewpoint 7 – ProW near Little Bromley Hall	Medium	Construction works across all projects will be visible to the north-west, with views filtered between field boundary vegetation to the south of Ardleigh Road. From this location, the proposed Five Estuaries onshore substation will be seen to the south-west (left in the view) of North Falls onshore substation. The large main building of Five Estuaries will be seen directly behind and above Norman's Farm. The Norwich to Tilbury substation will be seen behind and further to the south-west (left in the view). Intervening trees will screen parts of the infrastructure, though views of infrastructure and fencing will be seen between. Overhead lines connecting in to the Norwich to Tilbury substation will be visible on the skyline. Joint landscape mitigation proposals will be applied to the co-located North Falls and Five Estuaries substations, and it is assumed that similar principles will be applied to the Norwich to Tilbury substation. By year 15 this will help to screen lower parts of the infrastructure across all projects. Overhead lines will remain visible. The additional cumulative effects of the North Falls onshore substation in this scenario will be minor adverse (not significant) at construction and year 1 and at year 15.
Viewpoint 8 – Essex Way, Dedham Road	Medium-high	Due to screening by intervening vegetation and lack of clear visibility of the North Falls, Five Estuaries or Norwich to Tilbury substations (with the exception of overhead lines connecting in to Norwich to Tilbury substation), no significant cumulative effects are anticipated.
Visual receptors along the onshore cable route	Up to High	Along the landfall and onshore cable route, there would be no additional changes under this scenario. Effects will remain as in the Five Estuaries scenario, i.e. moderate adverse (significant) at construction, and negligible (not significant) at year 1.

30.9 Interactions

133. 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 30.33 below.

Table 30.33 LVIA interactions

Linked Chapter	Rationale	Section where addressed
ES Chapter 22 Land Use and Agriculture (Document Reference: 3.1.24)	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
ES Chapter 23 Onshore Ecology (Document Reference: 3.1.25)	Both chapters consider the effects of vegetation loss, including hedgerows (as a landscape element or an ecological asset). Both chapters consider the mitigation of vegetation loss.	Refer to landscape and visual receptors assessment in Section 30.6 and summary of mitigation as set out in Table 30.3.
ES Chapter 29 SLVIA (Document Reference: 3.1.31)	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, and additional explanation below.
ES Chapter 32 Tourism and Recreation (Document Reference: 3.1.34)	Both chapters consider effects on recreational receptors.	Refer to visual receptors in Section 30.6.

134. With regard to interactions between seascape, landscape and visual effects identified in ES Chapter 29 SLVIA (Document Reference: 3.1.31) 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.

135. 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 (over 40km), effects associated with the offshore turbines are judged to fall below the threshold of significance. Furthermore, the effects arising from the onshore export cable would be temporary and transitory in nature. As such, significant interaction effects, during the construction (and decommissioning phase) phase, are unlikely.

136. During operation, due to the location of the key visible components (offshore turbines/ offshore substation platforms and the onshore substation) there is no potential for combined and successive views as the onshore substation is approximately 20km inland. No locations have been identified where views of both the offshore turbines and inland views to the onshore substation works

area are available. As such, there is no potential for any interaction effects during the operational phase.

30.10 Inter-relationships

137. 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.

138. The areas of potential interrelationship are set out in Table 30.34.

Table 30.34 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

139. This LVIA describes the baseline landscape and visual environment within a study area defined as 2km radius around the onshore substation, and 500m radius around the landfall and onshore cable route. Using a methodology based on established good practice guidance and informed by a range of relevant policy and data sources, it presents a professional assessment of the likely significant impacts arising from construction and operation of the landfall, onshore cable route and onshore substation.

140. Table 30.35 provides a summary of the LVIA findings. There will be significant (moderate) effects on the landscape fabric of the onshore substation works area

and its surroundings during the construction and operational stages of the Project. The construction of the onshore substation will change the character from open arable fields to a construction site and subsequently an operational substation. The area within which significant effects would occur is approximately bounded by Ardleigh Road to the south, Grange Road to the south-west, Wormseywood Farm to the north, and the junction of Barn Lane and Ardleigh Road to the east.

141. The flat nature of the landscape and woodland and hedgerow cover limits the potential for wider effects on landscape character. No significant effects are predicted beyond this more localised area around the onshore substation works area, which is within LCA 7A Bromley Heaths.

142. There will be no significant effects on landscape character as a result of the onshore export cables, haul road, or Bentley Road improvement works. Construction effects associated with the onshore export cables will be very localised and transient in nature. Once operational, landscape effects associated with the underground cable are not judged to be significant.

143. The assessment concludes that there will be no significant effects on designated landscapes, including National Landscape designations.

144. Significant visual effects are predicted at Viewpoint 2: at Barn Lane (moderate at construction and year 1, reducing to minor and not significant at year 15), and at Viewpoint 3 Norman's Farm (major at construction and year 1, reducing to moderate at year 15). These viewpoints represent higher sensitivity residential or recreational receptors and are contained within 1km of the proposed onshore substation.

145. Effects on views around the landfall and onshore cable route will be localised, short-term and reversible. Up to moderate (significant) effects are predicted on high sensitivity visual receptors at the landfall and onshore cable route during construction. Effects during operation will be negligible and not significant.

146. Table 30.36 provides a summary of the cumulative LVIA findings. The cumulative assessment considered two scenarios. In relation to the North Falls + Five Estuaries scenario, the assessment found significant (moderate) cumulative effects on the landscape of the onshore substation works area and the local area of the Bromley Heaths LCA, at construction and year 1. Significant effects on views were identified at viewpoint 2 (moderate at construction and year 1), viewpoint 3 (major at construction and year 1, moderate at year 15); and viewpoint 5 (moderate at construction and year 1). Cumulative effects on views along the onshore cable route were assessed as moderate and significant during construction only.

147. The North Falls + All Projects scenario additionally considered the Norwich to Tilbury substation and overhead line, and the Little Bromley BESS. This assessment found the same distribution of significant cumulative effects as in the North Falls + Five Estuaries scenario.

148. Interactions between LVIA and other topic areas, and interrelationships within LVIA impacts, were not found to give rise to any additional significant effects.

Table 30.35 Summary of likely significant effects on LVIA

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of Effect at Year 1 (including embedded mitigation)	Additional Mitigation measures proposed	Significance of Effect at Year 15 (including mature embedded mitigation)
Construction						
Effects on Landscape Fabric	Landscape fabric of the onshore substation works area	Medium-Low	High	Moderate adverse	Mitigation measures during the construction phase are set out in Table 30.3 as embedded mitigation. No additional landscape and visual construction stage mitigation measures are proposed. Further details are provided in the OLEMS (Document Reference: 7.14).	N/A
Effects on Landscape Character	7A Bromley Heaths LCA	Medium	Medium-low (locally) Negligible (for the wider LCA)	Minor adverse (locally) Negligible (for the wider LCA)		N/A
	2C – Holland Haven LCA	Medium-High	Negligible - Low	Minor adverse		N/A
	3D – Holland Coastal Slopes LCA	Medium	Negligible - Low	Minor adverse		N/A
	8B – Clacton and the Sokens Clay Plateau LCA	Medium-Low	Negligible - Low	Minor adverse		N/A
	3A – Hamford Coastal Slopes LCA	Medium	Negligible - Low	Minor adverse		N/A

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of Effect at Year 1 (including embedded mitigation)	Additional Mitigation measures proposed	Significance of Effect at Year 15 (including mature embedded mitigation)
	8A – Tendring and Wix Clay Plateau LCA	Medium-Low	Negligible - Low	Minor adverse		N/A
	6D – Holland Valley System LCA	Medium-High	Negligible - Low	Minor adverse		N/A
Effects on Views	VP1 - Court Farm, Stutton Road	High	Negligible	Negligible		N/A
	VP2 - Bridleway at Barn Lane	Medium	Medium	Moderate adverse		N/A
	VP3 - Norman's Farm	Medium-High	High	Major adverse		N/A
	VP4 - Little Bromley Road to west	Medium-Low	Medium-low	Minor adverse		N/A
	VP5 - PRoW near Lilley's Farm	Medium	Medium-low	Minor adverse		N/A
	VP6 - Grange Road to north	Medium	Low	Minor adverse		N/A
	VP7 - PRoW near Little Bromley Hall	Medium	Medium-Low	Minor adverse,		N/A

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of Effect at Year 1 (including embedded mitigation)	Additional Mitigation measures proposed	Significance of Effect at Year 15 (including mature embedded mitigation)
	VP8 Essex Way, Dedham Road	Medium-High	Negligible	Negligible		N/A
	Receptors along the landfall and onshore cable route	High	Up to medium	Up to Moderate adverse		N/A
Operation						
Effects on Landscape Fabric	Landscape Impacts on the onshore substation works area	Medium-Low	High	Moderate adverse	Landscape and visual mitigation is discussed in the Design Vision document (Document Reference: 2.3) and the OLEMS (Document Reference: 7.14).	Moderate adverse
Effects on Landscape Character	7A Bromley Heaths LCA	Medium	Medium (locally) Low (for the wider LCA)	Moderate adverse (locally) Minor adverse (for the wider LCA)		Minor adverse
	2C – Holland Haven LCA	Medium-High	Negligible	Negligible		Negligible
	3D – Holland Coastal Slopes LCA	Medium	Negligible	Negligible		Negligible

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of Effect at Year 1 (including embedded mitigation)	Additional Mitigation measures proposed	Significance of Effect at Year 15 (including mature embedded mitigation)
	8B – Clacton and the Sokens Clay Plateau LCA	Medium-Low	Negligible	Negligible		Negligible
	3A – Hamford Coastal Slopes LCA	Medium	Negligible	Negligible		Negligible
	8A – Tendring and Wix Clay Plateau LCA	Medium-Low	Negligible	Negligible		Negligible
	6D – Holland Valley System LCA	Medium-High	Negligible	Negligible		Negligible
Effects on Views	VP1 - Court Farm, Stutton Road	High	Negligible	Negligible		Negligible
	VP2 - Bridleway at Barn Lane	Medium	Medium	Moderate adverse		Minor adverse
	VP3 - Norman's Farm	Medium-High	High	Major adverse		Moderate adverse
	VP4 - Little Bromley Road to west	Medium-Low	Medium-low	Minor adverse		Minor adverse

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of Effect at Year 1 (including embedded mitigation)	Additional Mitigation measures proposed	Significance of Effect at Year 15 (including mature embedded mitigation)
	VP5 - PRoW near Lilley's Farm	Medium	Medium-low	Minor adverse		Minor adverse
	VP6 - Grange Road to north	Medium	Low	Minor adverse		Minor adverse
	VP7 - PRoW near Little Bromley Hall	Medium	Medium-Low	Minor adverse		Minor adverse
	VP8 – Essex Way, Dedham Road	Medium-high	Negligible	Negligible		Negligible
	Receptors along the landfall and cable corridor	High	Negligible	Negligible		Negligible
Decommissioning						
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. However, it is considered likely that the 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.						

Table 30.36 Summary of cumulative effects on LVIA

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of Effect at Year 1 (including embedded mitigation)	Additional Mitigation measures proposed	Significance of Effect at Year 15 (including mature embedded mitigation)
Construction						
Effects on Landscape Fabric	Landscape fabric of the onshore substation works area	Medium-Low	High	Moderate adverse	Mitigation measures during the construction phase are set out in Table 30.3 as embedded mitigation. No additional landscape and visual construction stage mitigation measures are proposed. Further details are provided in the OLEMS (Document Reference: 7.14).	N/A
Effects on Landscape Character	7A Bromley Heaths LCA	Medium	Medium (locally) Low (for the wider LCA)	Moderate adverse (locally) Minor adverse (for the wider LCA)		N/A
Effects on Views	VP1 - Court Farm, Stutton Road	High	Negligible	Negligible		N/A
	VP2 - Bridleway at Barn Lane	Medium	Medium	Moderate adverse		N/A
	VP3 - Norman's Farm	Medium-High	High	Major adverse		N/A
	VP4 - Little Bromley Road to west	Medium-Low	Medium-low	Minor adverse		N/A
	VP5 - PRoW near Lilley's Farm	Medium	Medium	Moderate adverse		N/A

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of Effect at Year 1 (including embedded mitigation)	Additional Mitigation measures proposed	Significance of Effect at Year 15 (including mature embedded mitigation)
	VP6 - Grange Road to north	Medium	Low	Minor adverse		N/A
	VP7 - PRoW near Little Bromley Hall	Medium	Medium-Low	Minor adverse		N/A
	VP8 Essex Way, Dedham Road	Medium-High	Negligible	Negligible		N/A
	Receptors along the landfall and onshore cable route	High	Up to medium	Up to Moderate adverse		N/A
Operation						
Effects on Landscape Fabric	Landscape Impacts on the onshore substation works area	Medium-Low	High	Moderate adverse	Landscape and visual mitigation is discussed in the Design Vision document (Document Reference: 2.3) and the OLEMS (Document Reference: 7.14).	Moderate adverse
Effects on Landscape Character	7A Bromley Heaths LCA	Medium	Medium (locally) Low (for the wider LCA)	Moderate adverse (locally) Minor adverse (for the wider LCA)		Minor adverse

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of Effect at Year 1 (including embedded mitigation)	Additional Mitigation measures proposed	Significance of Effect at Year 15 (including mature embedded mitigation)
Effects on Views	VP1 - Court Farm, Stutton Road	High	Negligible	Negligible		Negligible
	VP2 - Bridleway at Barn Lane	Medium	Medium	Moderate adverse		Minor adverse
	VP3 - Norman's Farm	Medium-High	High	Major adverse		Moderate adverse
	VP4 - Little Bromley Road to west	Medium-Low	Medium-low	Minor adverse		Minor adverse
	VP5 - PRoW near Lilley's Farm	Medium	Medium	Moderate adverse		Minor adverse
	VP6 - Grange Road to north	Medium	Low	Minor adverse		Minor adverse
	VP7 - PRoW near Little Bromley Hall	Medium	Medium-Low	Minor adverse		Minor adverse
	VP8 – Essex Way, Dedham Road	Medium-high	Negligible	Negligible		Negligible

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of Effect at Year 1 (including embedded mitigation)	Additional Mitigation measures proposed	Significance of Effect at Year 15 (including mature embedded mitigation)
	Receptors along the landfall and cable corridor	High	Negligible	Negligible		Negligible
Decommissioning						
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. However, it is considered likely that the 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.						

30.12 References

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NORTH FALLS

Offshore Wind Farm

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HARNESSING THE POWER OF NORTH SEA WIND

North Falls Offshore Wind Farm Limited

A joint venture company owned equally by SSE Renewables and RWE.

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