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Bramford to Twinstead Reinforcement

Volume 6: Environmental Information

Document 6.3.6.3: ES Appendix 6.3 –Assessment of Effects on
Landscape Character

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1. Introduction

1.1 Overview

- 1.1.1 This document accompanies National Grid Electricity Transmission plc's (here on referred to as National Grid) application for development consent to reinforce the transmission network between Bramford Substation in Suffolk, and Twinstead Tee in Essex. The Bramford to Twinstead Reinforcement ('the project') would be achieved by the construction and operation of a new electricity transmission line over a distance of approximately 29km comprising of overhead lines, underground cables and grid supply point substation. It also includes the removal of 25km of the existing distribution network and various ancillary works.
- 1.1.2 It is assumed that this reinforcement would operate at least 400kV in a similar way to the majority of the rest of the transmission network. For the purposes of this report, the new overhead line is referenced as 'proposed 400kV overhead line' to differentiate it from the existing 400kV overhead line and the UK Power Networks (UKPN) owned 132kV overhead line. A full description of the project can be found in Environmental Statement (ES) Chapter 4: Project Description (**application document 6.2.4**).
- 1.1.3 This assessment of effects on landscape has been produced to support the application for development consent and the accompanying ES under the Planning Act 2008. It should be read in conjunction with the following ES documents:
- Chapter 6: Landscape and Visual (**application document 6.2.6**); and
 - Appendix 6.1: Landscape and Visual Methodology (**application document 6.3.6.1**).
- 1.1.4 The assessment presented in this report is based on the Proposed Alignment shown in ES Figure 4.1: The Project (**application document 6.4**). As this is a Nationally Significant Infrastructure Project, National Grid is seeking consent for horizontal and vertical Limits of Deviation (LoD) within which the final alignment would lie. Consideration has been given to the potential for effects to be of greater significance should any of the permanent or temporary infrastructure elements be moved within the LoD. The assumptions made regarding the use of flexibility for the assessment, and any alternative assumptions, are set out in ES Chapter 6: Landscape and Visual (**application document 6.2.6**).

1.2 Structure of this Report

- 1.2.1 The report follows the structure shown in Table 1.1.

Table 1.1 – Structure of this Report

Chapter	Content
1: Introduction	Introduction (this chapter)
2: Methodology	Methodology and scope of the assessment
3: Assessment	Details on value, susceptibility, sensitivity, magnitude of change and overall assessment for each Landscape Character Area (LCA)
4: Conclusion	A summary of the assessment for each LCA

2. Methodology

2.1 Introduction

2.1.1 The landscape character assessment follows the approach set out in ES Appendix 6.1: Landscape and Visual Methodology (**application document 6.3.6.1**). In summary it considers the following, in relation to each LCA:

- Landscape sensitivity (taking into consideration landscape value and susceptibility);
- Assessment of magnitude of change; and
- Significance of landscape effects.

Study Area

2.1.2 The Study Area for the assessment is shown on ES Figure 6.1: Landscape and Visual Impact Assessment Study Area and Landscape Designations (**application document 6.4**) and extends to 5km from the Order Limits. This distance was determined by the nature of the surrounding environment, the physical scale of the proposals and the likely distance over which they would be sufficiently visible to give rise to significant effects. It was also informed by the Zone of Theoretical Visibility (ZTV) plans presented on ES Figures 6.7 to 6.13 (**application document 6.4**).

Baseline

2.1.3 The baseline descriptions were informed by an extensive review of published information including the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), the Essex Landscape Character Assessment (Chris Blandford Associates, 2003), Ordnance Survey (OS) maps, Google Earth Pro, Google Streetview, and field survey. This information was supported by baseline information from the other EIA disciplines, notably ES Chapter 7: Biodiversity (**application document 6.2.7**) and ES Chapter 8: Historic Environment (**application document 6.2.8**). All the desk-based information was verified during field surveys.

2.1.4 Landscape value tables are included for each LCA. These highlight the professional judgements made with regard to the appraisal of the relative value of the landscape (within the study area). As described in the methodology in ES Appendix 6.1: Landscape and Visual Methodology (**application document 6.3.6.1**), judgements are made against a series of factors and are visually represented on a sliding scale bar representing lower to higher value.

Assessment of Susceptibility

2.1.5 As with the appraisal of landscape value, initial judgements of susceptibility are made against individual factors in accordance with Section 2 of the methodology set out in ES Appendix 6.1: Landscape and Visual Methodology (**application document 6.3.6.1**). These judgements are visually represented on a sliding scale bar representing lower to higher value. The detailed assessments of landscape susceptibility primarily relate to the 400kV overhead line component of the project. Where applicable some of the LCA also include a susceptibility table in relation to a cable sealing end (CSE) compound, grid supply point (GSP) substation or underground cables.

2.1.6 An overall judgement of landscape susceptibility is included at the end of these tables.

Assessment of Sensitivity

2.1.7 The assessment of the sensitivity of the landscape to the project is based on the judgements for landscape value and susceptibility in accordance with Section 2 of the methodology set out in ES Appendix 6.1: Landscape and Visual Methodology (**application document 6.3.6.1**).

Assessment of Magnitude of Change

2.1.8 An assessed magnitude of likely change to the landscape due to the project takes into consideration judgements on the anticipated size/scale of effect and the geographical extent as per Section 2 of the methodology set out in ES Appendix 6.1: Landscape and Visual Methodology (**application document 6.3.6.1**). These judgements are reported for construction, operation – Year 1, and operation – Year 15.

Overall Assessment of Landscape Effects

2.1.9 Judgements on the significance of landscape effects as a result of the project take account of the overall judgements on sensitivity and magnitude of change as explained in Section 2 of the methodology (**application document 6.3.6.1**). These judgements are reported for construction, operation – Year 1, and operation – Year 15 and effects are ultimately highlighted as ‘significant’ or ‘not significant’. The judgements also consider the following measures which are included in the design of the project,

- Hedgerow, tree and shrub reinstatement as shown on the Vegetation Reinstatement Plans in Appendix B of the Landscape and Ecological Management Plan (LEMP) (**application document 7.8.2**); and
- Embedded measures including planting around the CSE compounds and planted mounds around the GSP substation as described in ES Chapter 16: Environmental Management and Mitigation (**application document 6.2.16**).

2.1.10 The assessment presented in this document assumes that these measures are in place.

2.1.11 In addition, there are some locations where additional mitigation is proposed for specific purposes, such as to reduce a significant effect for biodiversity. The additional mitigation is shown on ES Figure 16.1: Embedded Measures and Mitigation Proposals (**application document 6.4**).

2.1.12 The following areas of additional mitigation are included in the assessment even though they are not a response to significant landscape effects. This is because these areas are large enough to have a noticeable effect on the landscape by Year 15:

- New woodland planting between Wolves Wood and Ramsey Wood (MM09); and
- New woodland planting south-east of Ramsey Wood (MM10).

2.1.13 These measures are considered in the Year 15 assessment for LCA 2: Suffolk Ancient Plateau Claylands.

2.1.14 There are a number of additional areas of planting identified for landscape softening. These are not mitigation and most of these measures consist of short sections of new linear woodland or hedgerow planting and are too small to have an effect on the

landscape within the LCA. They are therefore not presented or assessed in this document.

2.1.15 Where judgements refer to a distance from the LoD or to effects on the landscape within the LoD, this is to reflect the impacts of the works within the main construction or operational corridors.

2.2 Scope of Assessment

2.2.1 The assessment is based on the landscape character types defined in the county level landscape character assessments for Suffolk (Suffolk County Council, 2011) and Essex (Chris Blandford Associates, 2003). This approach follows feedback from the Planning Inspectorate set out in the Scoping Opinion (**application document 6.6**).

2.2.2 The assessment only applies to the part of the LCA which falls within the study area. Where appropriate, LCA have been divided into smaller sections for the assessment, particularly for those LCA which cross the study area several times.

2.2.3 It should be noted that there is an overlap between the landscape character assessment for Suffolk and the comparable assessment for Essex. For the purposes of the assessment and to avoid double counting, the LCA for each county are only considered up to the county boundary.

2.2.4 Fourteen LCA cover the study area and are shown on ES Figure 6.5: Landscape Character (**application document 6.4**). This identifies where each part of the LCA is located within the study area and also illustrates the project in relation to the LCA.

2.2.5 The results of an initial screening exercise are set out in Table 2.1. The table identifies the LCA which are very unlikely to experience significant effects and the reason why they have not been taken forward for full assessment. The screening was informed by a desk based assessment of Google Earth Pro, the ZTV plans on ES Figures 6.7 to 6.13 (**application document 6.4**), the viewpoint assessment at ES Appendix 6.4: Viewpoint Assessment (**application document 6.3.6.4.1 to 6.3.6.4.7**) and field survey.

Table 2.1 – Landscape Character Areas Excluded from Assessment of Effects

LCA Name	Justification
Suffolk Ancient Estate Farmlands	<p>This LCA is located toward the eastern end of the study area, where it lies mainly to the south of the A12. At its closest point near Copdock it is approximately 2.2km from the nearest point of the Order Limits for the existing 132kV overhead line removal and 4km from the Order Limits for the new 400kV overhead line. It would not be directly affected by the construction of the project and construction traffic would not pass through it except for along the A12 and A14 which are already busy roads.</p> <p>The LCA comprises an area of large-scale arable farmland with occasional woodlands. The A12/A14 interchange lies close to the northern boundary of this LCA and the A12 crosses its western edge. Together with the Colchester to Ipswich Railway, this introduces visual and noise disturbance across the farmland. Views out of the LCA to the north and north-west are also affected by the presence of multiple transmission and distribution lines.</p>

LCA Name	Justification
Suffolk Plateau Estate Farmlands	<p>The ZTV indicates potential intervisibility but given the distance, screening effect of woodland and trees (not picked up in the ZTV), and presence of multiple overhead lines in views out of the LCA, the effects on the landscape would not be significant and the LCA is therefore not assessed further.</p>
Suffolk Rolling Estate Farmlands	<p>This LCA is located toward the eastern end of the study area. At its closest point near Broom Hill it lies approximately 3.1km from the nearest point of the Order Limits. It would not be directly affected by the construction of project and construction traffic would not pass through it except for along the A14 which is already a busy road.</p> <p>This LCA occupies an area of higher ground on the northern edge of Ipswich east of the Gipping Valley. It is heavily influenced by urban development, including the A14/A1156 interchange, industrial estates and the presence of transmission and distribution lines which cross the LCA and are a key characteristic of views out to the west.</p> <p>The ZTV indicates potential intervisibility between the LCA and the project but the removal of the existing 132kV overhead line and presence of the new 400kV overhead line would not fundamentally alter the composition or character of these views or indirectly influence the character of the landscape within the LCA. Any effects would not be significant and the LCA is therefore not assessed further.</p>
Suffolk Urban	<p>This LCA is located towards the eastern end of the study area. At its closest point it lies approximately 1.7km from the nearest point of the Order Limits for the existing 132kV overhead line removal and 2.3km from the Order Limits for the new 400kV overhead line. It would not be directly affected by the construction of the project and construction traffic would not travel through it with the exception of the A12 and A14 which are already busy roads.</p> <p>This LCA occupies the eastern valley side of the River Gipping close to Ipswich. The landscape has been affected by proximity to the urban area with some small fields and areas of woodland which are influenced by the A12 road corridor, railway and existing transmission and distribution lines.</p> <p>The ZTV indicates potential intervisibility between the LCA and the project but the removal of the existing 132kV overhead line and presence of the new 400kV overhead line would not fundamentally alter the composition or character of these views or indirectly influence the character of the landscape within the LCA. Any effects would not be significant and the LCA is therefore not assessed further.</p> <p>Within the study area, Ipswich, Hadleigh and Sudbury are characterised as Urban. There is no formal assessment of its character within the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), which primarily considers the surrounding rural landscape.</p> <p>These areas would not be directly affected by the construction of the project, although construction traffic would pass through Ipswich on the A12/A14, and Sudbury on the A134, Shawlands Avenue, Head Lane and the B1508.</p>

LCA Name	Justification
Essex C7 Colne Valley	<p>The ZTV (ES Figure 6.8: ZTV of Proposed 400kV Overhead Line by Project Section AB (application document 6.4)), indicates potential intervisibility between the western edge of Ipswich and the project but views out from the urban area are already affected by the presence of multiple transmission and distribution lines. The removal of the existing 132kV overhead line and presence of the new 400kV overhead line would not fundamentally alter the composition or character of these views or indirectly influence the character of the landscape within the LCA.</p> <p>Any effects would not be significant and the LCA is therefore not assessed further.</p>
Essex E4 North Colchester Farmlands	<p>This LCA is located towards the western end of the study area and is an area of rolling small to medium-scale farmland where enclosure is provided by a strong pattern of hedgerows, hedgerow trees and small woodlands.</p> <p>Movement of construction vehicles and plant along the A131, A1124, Bures Road, Mill Road, Church Road and Moat Road and along section of temporary access route which would clip the northern edge of the LCA would introduce some localised visual and noise disturbance but would not fundamentally alter the composition or character of views out to the north or indirectly affect the character of the landscape within the LCA.</p> <p>The presence of a field boundary hedgerow with trees to the south means that that views out from most of the LCA would not be affected by vehicle and plant movements.</p> <p>The closest long term components of the project are the existing 400kV overhead line which would be removed and the presence of the 400kV underground cables and Stour Valley West CSE compound. The ZTV indicates potential intervisibility with these components east of Mabb's Corner, but views of the upper parts of the 400kV pylons would be distant and would not fundamentally alter the composition or indirectly influence the character of the landscape within the LCA.</p> <p>Any effects would not be significant and the LCA is therefore not assessed further.</p>

3. Assessment

3.1 LCA 1: Suffolk Rolling Valley Farmlands

Baseline

- 3.1.1 Within the study area, this LCA covers the sides of the Stour Valley, including the tributary valleys of the Gipping, Brett and Box. Much of this LCA is covered by the AONB, SVPA, Gipping Valley Special Landscape Area (SLA), Brett Valley SLA, Box Valley SLA, and Stour Valley SLA.
- 3.1.2 Erosion of the undulating chalk geology with surface till has created gently sloping valley sides with some complex topography and occasionally steep slopes, as at Shelley in the Brett Valley. The farmland displays an organic pattern of small and medium-sized fields bordered by often species-rich hedgerows with trees on the lower slopes, although on the higher valley sides nearer the plateau, the field pattern becomes more regular with intermittent hedgerows. In places fields are amalgamated with boundary removal forming larger and more open arable farmland. The overall impression in the landscape is of sinuous and organic boundaries around anciently enclosed fields.
- 3.1.3 Blocks of ancient woodland are a consistent landscape feature, particularly on the upper valley slopes, where they frame views into and out of the LCA.
- 3.1.4 The farmland is comprehensively settled with locally distinctive villages often with late medieval cores and architecturally significant churches, such as St Mary's Church at Polstead in the Box Valley. The villages are connected by a network of lanes and roads. Many of the lanes are sunken with embankments and hedgerows. The area has some typical parkland landscapes with wood pasture, tree avenues and plantation woodland. The largest is Tendring Hall Park which occupies a river-valley setting at Stoke-by-Nayland and is Grade II listed in the Historic England 'Registered of Parks and Gardens of Historic Interest in England'. Smaller parks are associated with former manorial halls include Gifford's Hall at Stoke-by-Nayland, Polstead Park in the Brett Valley, and formerly at Bramford and Sproughton in the Gipping Valley.
- 3.1.5 The landscape within this LCA is rich and varied with its concentration of prosperous medieval towns and villages, contrasting with the smaller and less historic settlements on the surrounding plateaux. The steeper valleys and sunken lanes contrast with other valley networks in Suffolk. This LCA includes some of the most famous views and sites in Suffolk, East Anglia and England. As noted in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), the Stour Valley is internationally renowned as 'Constable Country', being the inspiration for many of the landscape paintings of John Constable and other artists.
- 3.1.6 Much of the landscape retains its historic patterns in terms of both the agricultural and built environment. However, the Gipping Valley was the focus of economic activity in the 19th and early 20th century and as such has been subject to transport and industrial development. Conversely the Stour and its tributaries have been subject to some gentrification, with changes in land use including an increase in horse pastures and loss of both commercial and traditional orchards. Other discordant elements include the existing 132kV and 400kV overhead lines (which cross this LCA in several locations) and the large Boxford Fruit Farm near Peyton Hall.

Landscape Sensitivity

- 3.1.7 Much of this LCA is covered by either the AONB, SVPA or one of the four SLA, which extend from the northern edge of the AONB along the valleys of the Rivers, Gipping, Brett, Box and Stour. Together with the judgements made against indicators of landscape value listed in Table 3.1, this means that the value of the LCA within the study area is considered to be high.

Table 3.1 – Landscape Value of LCA 1

Factors Used to Judge Value	Judgements on Value	
	Lower	Higher
Landscape character and quality		■
Scenic quality		■
Conservation interests		■
Recreation value	■	
Perceptual aspects and tranquillity		■
Associations		■
Overall value	The overall value of this landscape is judged to be high.	

- 3.1.8 Aspects of the landscape which are of higher susceptibility to the project include the strong visual relationship between the valley sides and the valley floor, which could be diminished by the presence of large pylons with adverse consequences for the character and quality of the landscape within the LCA.
- 3.1.9 The landscape setting and views to and from the many historic elements and features in the landscape, including the parklands are highly susceptible to visual intrusion.
- 3.1.10 The rural character and sense of tranquillity and rural isolation expected across much of this LCA is susceptible to dilution and disturbance particularly during construction of the 400kV underground cables.
- 3.1.11 The existing 132kV and 400kV overhead lines (which cross this LCA in several locations) and the large Boxford Fruit Farm near Peyton Hall reduce the susceptibility of the landscape to the project as scenic quality and rural character has already been compromised.
- 3.1.12 Based on the above and the judgements made against indicators of landscape susceptibility listed in Tables 3.2 – 3.4, the susceptibility of the landscape is considered to be medium-high.

Table 3.2 – Landscape Susceptibility of LCA 1 to a New 400kV Overhead Line

Factors Used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Holford Rules 4 and 5)		■
Landcover (Holford Rules 5 and 6)	■	
Scale		■
Skylines (Holford Rule 4)		■
Human influence	■	
Settlement pattern		■
Overall susceptibility	The overall susceptibility of this landscape to a new 400kV overhead line is judged to be medium-high.	

Table 3.3 – Landscape Susceptibility of LCA 1 to Underground Cables

Factors Used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform		■
Landcover and scale		■
Human influence		■
Overall susceptibility	The overall susceptibility of this landscape to underground cables is judged to be medium.	

Table 3.4 – Landscape Susceptibility of LCA 1 to a CSE Compound/GSP Substation

Factors Used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Horlock Rule 4)		■
Landcover		■
Field pattern, scale and enclosure		■
Human influence	■	
Overall susceptibility	The overall susceptibility of this landscape to a CSE compound and/or GSP substation is judged to be medium-high.	

3.1.13 When combined with the high value, the sensitivity of the LCA to the project is considered to be high.

Assessment of Effects

- 3.1.14 The landscape within this LCA would not be affected by construction and/or operation of the GSP substation which is therefore not considered.
- 3.1.15 The assessment of this LCA references five sub areas in order to capture the effects of the project in more detail. These are the:
- LCA 1a – Gipping Valley;
 - LCA 1b – Burstall;
 - LCA 1c – Brett Valley;
 - LCA 1d – Box Valley; and
 - LCA 1e – Stour Valley.

Construction

Main Project

LCA 1a – Gipping Valley

- 3.1.16 There would be no direct effects on the landscape of LCA 1a from either the existing 132kV overhead line removal, construction of the new 400kV overhead line or the modifications to the existing 400kV overhead line close to Bramford Substation, as they all lie outside the LCA.
- 3.1.17 It is highly unlikely that construction activities around Bramford Substation would be perceptible from the Gipping Valley due to the intervening landform and woodland, although the landscape would be subject to some slightly increased visual and noise disturbance from construction traffic using the B1113 and Bullen Lane.
- 3.1.18 It is anticipated that the effects on the landscape would be adverse and the magnitude of change would be negligible. Taking account of the high landscape sensitivity, the overall construction effects of the project on the landscape within LCA 1a would be **neutral (not significant)**.

LCA 1b - Burstall

- 3.1.19 The landscape south of the A1071 in LCA 1b would be directly affected by the dismantling and removal of the existing 132kV and 400kV overhead lines, as well as modification of the existing 400kV overhead line.
- 3.1.20 These construction activities would directly affect the landscape but the effects would be short term and require little vegetation removal. A small working area around each pylon would be required and most of the work is likely to be at ground level with some limited at-height working, which would include the use of mobile cranes.
- 3.1.21 The indirect effects would be some localised loss of scenic quality, and sense of tranquillity/rural isolation. Movement of construction vehicles and plant along the A1071, Washbrook Road, The Street, Lower Barn Road, Churchill Road and along the temporary access routes would introduce some additional visual and noise disturbance outside the main working areas.

3.1.22 These effects would, however, be short term and temporary and would be seen in the context of the existing overhead lines.

3.1.23 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the high landscape sensitivity, the overall construction effects of the project on the landscape within LCA 1b would be **minor adverse (not significant)**.

LCA 1c – Brett Valley

3.1.24 The valley sides of the River Brett and its tributary which flows past Overbury Hall in LCA 1c would be directly affected by the dismantling and removal of the existing 132kV overhead line and construction of the new 400kV overhead line.

3.1.25 These construction activities would directly affect the landscape, but the effects would be short term and require little vegetation removal. A small working area around each pylon would be required and most of the work is likely to be at ground level with some limited at-height working, which would include the use of mobile cranes.

3.1.26 The indirect effects would be focussed on the landscape between Layham and Hadleigh and would include a loss of rural character and scenic quality. Movement of construction vehicles and plant along Pond Hill Road, Clay Lane, the B1070, Overbury Hall Road, Rands Road, and along the temporary access routes would introduce some additional visual and noise disturbance outside the main working areas.

3.1.27 These effects would, however, be short term and temporary and would be seen in the context of the existing overhead lines.

3.1.28 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the high landscape sensitivity, the overall construction effects of the project on the landscape within LCA 1c would be **minor adverse (not significant)**.

LCA 1d – Box Valley

3.1.29 The valley sides of the River Box in LCA 1d would be directly affected by dismantling and removal of the existing 132kV overhead line and construction of the 400kV underground cables.

3.1.30 These construction activities would directly affect the landscape, but the effects would be short term and require little vegetation removal. A small working area around each pylon would be required and most of the work is likely to be at ground level with some limited at-height working, which would include the use of mobile cranes.

3.1.31 The indirect effects would be some localised loss of scenic quality, and sense of tranquillity/rural isolation. Movement of construction vehicles and plant along Pond Hill Road, Clay Lane, the A1071 and along the temporary access routes would introduce some additional visual and noise disturbance outside the main working areas. These effects would, however, be short term and temporary and would be in the context of the existing overhead lines.

3.1.32 The scale of the activities required to construct the 400kV underground cables, would noticeably alter the appearance of the local landscape within the LoD between Homey Bridge and Beech Hill. The existing rural farmland would become a linear construction site across a working area on average 80m wide. Initial vegetation removal would be

followed by the presence of working areas, temporary access routes, excavation of open-cut trenches and a concentration of construction equipment and activity. For assessment purposes, it is assumed that construction of the trenchless crossing under the Box Valley may include overnight working. This would require night time lighting of the working areas on both sides of the trenchless crossing but is likely to be an exceptional and infrequent occurrence.

- 3.1.33 On completion of the works, vegetation would be reinstated with the exception of trees, which could not be replanted over the underground cables.
- 3.1.34 The indirect effects on the landscape resulting from the construction activities would include a loss of scenic quality, and sense of tranquillity/rural isolation. Due to the localised screening by landform and vegetation within the Box Valley, the effects would be limited to those parts of the valley which would be relatively close to the works.
- 3.1.35 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be large within approximately 1km of the LoD reducing to small when experienced in the wider context of LCA 1d. Taking account of the high landscape sensitivity, the overall construction effects of the project on the landscape within LCA 1d would be **major adverse (significant)** locally within approximately 1km of the LoD, reducing to **minor adverse (not significant)** for LCA 1d as a whole.

LCA 1e – Stour Valley

- 3.1.36 In LCA 1e, there would be direct effects from the dismantling and removal of a short section of the existing 132kV overhead line, construction of the 400kV underground cables, short section of trenchless crossing under the River Stour, and construction of the Stour Valley East CSE compound.
- 3.1.37 The scale of the activities required to construct the different components of the project, particularly the 400kV underground cables and Stour Valley East CSE compound, would noticeably alter the appearance of the local landscape within the LoD on the eastern side of the Stour Valley. The existing rural farmland would become a linear construction site across a working area on average 80m wide. Initial vegetation removal would be followed by the presence of two construction compounds, working areas, temporary access routes, temporary bridges, excavation of open-cut trenches and trenchless crossing compounds and a concentration of construction equipment and activity. On completion of the works, vegetation would be reinstated with the exception of trees which could not be replanted over the underground cables. Movement of construction vehicles and plant along the B1508 and Colchester Road would introduce some additional visual disturbance outside the main working areas.
- 3.1.38 For the purposes of the assessment, it is assumed that construction of the trenchless crossing under the River Stour and also under the Sudbury Branch Railway Line and to the south of Ansell's Grove in the neighbouring LCA 7 may include overnight working. This would require night time lighting of the working areas on both sides of each trenchless crossing but is likely to be an exceptional and infrequent occurrence.
- 3.1.39 The indirect effects on the landscape resulting from the presence of construction activities, in both this LCA (and LCA 7 on the western side of the River Stour), would include a loss of scenic quality, and sense of tranquillity/rural isolation. The openness of the valley sides reduces the amount of tree loss but means that construction activities would be widely visible in views across the valley.

- 3.1.40 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be large within approximately 1km of the LoD, reducing to small when experienced in the wider context of LCA 1e. Taking account of the high landscape sensitivity, the overall construction effects of the project on the landscape within LCA 1e would be **major adverse (significant)** locally within 1km of the LoD, reducing to **minor adverse (not significant)** for LCA 1e as a whole.

Operation Year 1

Main Project

LCA 1a – Gipping Valley

- 3.1.41 There would be no effects in LCA 1a from operation of the project. This is because it is highly unlikely that the changes around Bramford Substation would be perceptible from the Gipping Valley due to the intervening landform and woodland. Therefore, there would be no change to the character of the landscape in LCA 1a at Year 1 and therefore **no effect**.

LCA 1b – Burstall

- 3.1.42 The reduction in the extent and influence of high voltage electricity infrastructure across LCA 1b resulting from the removal of the existing 132kV overhead line south of the A1071 and reduction in the number of 400kV pylons west of Burstall, would have an indirect effect on the landscape and benefit views across and into/out of LCA 1b. The magnitude of change would, however, be moderated by the presence of existing 132kV and 400kV overhead lines.
- 3.1.43 It is anticipated that the overall effect on the landscape would be beneficial and the magnitude of change would be small. Taking account of the high landscape sensitivity, the overall operational effects of the project on the landscape within LCA 1b at Year 1 would be **minor beneficial (not significant)**.

LCA 1c – Brett Valley

- 3.1.44 The valley sides of the River Brett and its tributary, which flows past Overbury Hall in LCA 1c, would be indirectly affected by the removal of the existing 132kV overhead line and the presence of the new 400kV overhead line.
- 3.1.45 The new 400kV overhead line would introduce noticeably larger pylons along broadly the same route as the existing 132kV overhead line and increase the proportion of available views occupied by overhead line infrastructure. This would increase the presence and influence of the existing 400kV overhead line between Layham and Hadleigh, resulting in a slight reduction in scenic quality.
- 3.1.46 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the high landscape sensitivity, the overall operational effects of the project on the landscape within LCA 1c at Year 1 would be **minor adverse (not significant)**.

LCA 1d – Box Valley

- 3.1.47 The removal of the existing 132kV overhead line in association with the 400kV underground cables, would reduce the extent and influence of high voltage electricity infrastructure on a part of the LCA which lies completely within the AONB, and have a

beneficial effect on the small-scale wooded valley of the River Box and the wider parkland landscape of Polstead Park. There would be no noticeable effects on the landscape from the cable joints and link pillars associated with the 400kV underground cables.

- 3.1.48 The degree of beneficial effect from removing the existing 132kV pylons must be balanced against the continued presence of the existing 400kV overhead line and the immediate post-construction effects of the undergrounding, which would continue to adversely affect the landscape. The removal and reinstatement of temporary construction compounds, working areas and access routes would reduce the overall perceptible disturbance. Vegetation would be reinstated along the former construction corridor as described in the LEMP (**application document 7.8**) but at Year 1 this planting would be immature and the areas previously used for construction would appear as a linear swathe within the rural farmland. The absence of trees, which were removed during construction, would also be noticeable and locally affect the character of the landscape. Due, however, to the low-level nature of the effects and the high tree and woodland cover which characterises the landscape within this part of the Box Valley and includes the woodland at Broom Hill and Bushy Park Wood, the effects on the landscape would be very localised.
- 3.1.49 On balance, it is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the high landscape sensitivity, the overall operational effects of the project on the landscape within LCA 1d at Year 1 would be **minor adverse (not significant)**.

LCA 1e – Stour Valley

- 3.1.50 The removal of the two overhead lines (the existing 132kV overhead line and the 400kV overhead line south of the diamond crossing) in association with the 400kV underground cables would reduce the extent and influence of high voltage electricity infrastructure across the northern part of the LCA and have a beneficial effect on its landscape, in terms of its scenic quality, and views both across and along the valley. There would be few noticeable effects on the landscape from the trenchless crossings under the Stour Valley and to the south of Ansell's Grove or from the cable joints and link pillars associated with the 400kV underground cables.
- 3.1.51 The degree of beneficial effect from removing the existing pylons must be balanced against the continued presence of the existing 400kV overhead line and the immediate post-construction effects of the undergrounding, which would continue to affect the landscape.
- 3.1.52 At Year 1, the removal and reinstatement of temporary construction compounds, working areas and access routes would reduce the overall perceptible disturbance. Vegetation would be reinstated along the former construction corridor as described in the LEMP (**application document 7.8**) but at Year 1 this planting would be immature and the areas previously used for construction would be noticeable within the rural farmland. The absence of trees which were removed during construction would also be noticeable and locally affect the character of the landscape. Due, however, to the low-level nature of the effects and the high woodland and tree cover, the effects on the landscape would be localised.
- 3.1.53 The Stour Valley East CSE compound and associated gantries would be in a similar location to pylons on the existing 132kV overhead line which would be removed. The visibility of the CSE compound would be lessened by its location next to a block of

woodland on the lower slopes of a tributary valley of the River Stour. It would also be seen in the context of the existing 400kV overhead line.

- 3.1.54 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the high landscape sensitivity, the overall operational effects of the project on the landscape within LCA 1e at Year 1 would be **minor adverse (not significant)**.

Operation Year 15

Main Project

The following sub-sections would experience a change to the level of effect predicted for Year 1.

LCA 1d – Box Valley

- 3.1.55 By Year 15, the reinstatement planting associated with the 400kV underground cables would be maturing and the landscape would be returning to its existing character. The adverse effects on the landscape predicted at Year 1 would diminish and the beneficial effects of removing the existing 132kV overhead line would be increasingly experienced.
- 3.1.56 It is anticipated that the effect on the landscape would be beneficial and the magnitude of change would be medium-small. Taking account of the high landscape sensitivity, the overall operational effects of the project on the landscape within LCA 1d at Year 15 would be **minor beneficial (not significant)**.

LCA 1e – Stour Valley

- 3.1.57 By Year 15, the embedded planting around the Stour Valley East CSE compound in LCA 1e would be maturing and both screen the infrastructure and integrate it into the wider landscape. Similarly, the reinstatement planting associated with the 400kV underground cables would be maturing and the landscape would be returning to its existing character. The adverse effects on the landscape predicted at Year 1 would diminish and the beneficial effects of removing the existing 132kV overhead line would be increasingly experienced.
- 3.1.58 It is anticipated that the effect on the landscape would be beneficial and the magnitude of change would be medium-small. Taking account of the high landscape sensitivity, the overall operational effects of the project at Year 15 would be **minor beneficial (not significant)**.

3.2 LCA 2: Suffolk Ancient Plateau Claylands

Baseline

- 3.2.1 Within the study area, this LCA covers the higher land between Bramford and Hadleigh, excluding the Gipping Valley at Burstall which is in the adjoining LCA 1 Suffolk Rolling Valley Farmlands. Parts of the LCA are covered by the Gipping Valley SLA.
- 3.2.2 The LCA comprises a plateau of glacial boulder clay which is flat or gently rolling. The edges of the plateau are incised by a series of small river valleys which creates steeper and more complex slopes. The land is mainly in arable cultivation with an irregular pattern of medium-large fields bordered by hedgerows with hedgerow trees. In places, field

amalgamation has weakened the earlier field patterns leading to the localised areas of more open and larger scale landscapes but enough remains of the historic field pattern to give the farmland a distinctive character. The term ‘tye’ as in Barking Tye and Charles Tye are the only indicator of former historic greens or commons.

- 3.2.3 Scattered blocks of ancient woodland such as Wolves Wood, Ramsey Wood and Hintlesham Wood, and 18th and 19th century plantations are a distinctive feature of the landscape. The settlement pattern is one of loosely clustered villages, hamlets, and isolated farmsteads typically of medieval origin and with a strong vernacular quality. The villages are often associated with village greens, although these have occasionally been lost to housing development or tree planting.
- 3.2.4 The LCA contains an important array of moated sites and farmsteads, both multi-period collections of buildings and some planned estate-type farmsteads. These are often the focus for redevelopment and modification. As well as the loss of characteristic features on individual buildings, the associated development of garden curtilages and paddocks has a significant impact on the wider landscape, which increases with the frequency of such conversions.
- 3.2.5 Despite its elevation much of the plateau has a wooded character and strong sense of enclosure. This is due to the high coverage of woodlands and hedgerows with hedgerow trees. A network of winding lanes and paths often associated with the hedgerows also helps to create a sense of enclosure and visual intimacy in places.
- 3.2.6 Discordant elements include the multiple transmission and distribution lines which converge on Bramford Substation, although the substation itself is not prominent in the wider landscape.

Landscape Sensitivity

- 3.2.7 Part of this LCA falls within the Gipping Valley SLA. Whilst this is an indicator of higher value, because of the judgements made against the indicators of landscape value listed in Table 3.5, the value of the LCA within the study area is considered to be medium.

Table 3.5 – Landscape Value of LCA 2

Factors used to Judge Value	Judgements on Value	
	Lower	Higher
Landscape character and quality		██████████
Scenic quality		██████████
Conservation interests		██████████
Recreation value	██████████	
Perceptual aspects and tranquillity	██████████	
Associations	██████████	
Overall value	The overall value of this landscape is judged to be medium.	

- 3.2.8 Aspects of the landscape which are of higher susceptibility to the project include the relationship between the plateau and the valley sides. Around the edge of the plateau, the presence of 400kV pylons would diminish the contrast in scale between the plateau

and the small, incised stream valleys as well as potentially being visible over a wide area. This would adversely affect the character and quality of the landscape and views across and into/out of the LCA.

- 3.2.9 Other characteristics which are of higher susceptibility to a new 400kV overhead line are the vernacular settlements and isolated medieval farmsteads, the landscape setting of which are susceptible to loss or degradation from the presence of the pylons.
- 3.2.10 Away from the edge of the plateau, the larger scale of the farmland means that it is better able to accommodate the size of the pylons without detrimental effects on landscape character whilst the blocks of ancient woodland and plantation provide opportunities to screen and visually integrate the lower parts of the pylons into the landscape.
- 3.2.11 The multiple transmission and distribution lines which converge on Bramford Substation to the east of the Brett Valley reduce the susceptibility of the landscape in this part of the LCA to the project as scenic quality and rural character has already been compromised.
- 3.2.12 Based on the above and the and the judgements made against indicators of landscape susceptibility listed in Table 3.6, the susceptibility of the landscape is considered to be medium-low.

Table 3.6 – Landscape Susceptibility of LCA 2 to a New 400kV Overhead Line

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Holford Rules 4 & 5)	←————→	
Landcover (Holford Rules 5 & 6)	←————→	
Scale	←————→	
Skylines (Holford Rule 4)	←————→	
Human influence	←————→	
Settlement pattern	←————→	←————→
Overall susceptibility	The overall susceptibility of this landscape to a new 400kV overhead line is judged to be medium-low.	

- 3.2.13 When combined with the high value, the sensitivity of the LCA to the project is considered to be medium.

Assessment of Effects

- 3.2.14 The landscape within this LCA would not be affected by construction and/or operation of the GSP substation which is therefore not considered.
- 3.2.15 The assessment of this LCA references two sub areas in order to capture the effects of the project in more detail. These are:
 - LCA 2a – Bramford Substation; and
 - LCA 2b – Hintlesham.

Construction

Main Project

LCA 2a – Bramford Substation

- 3.2.16 In LCA 2a, near Bramford Substation, there would be direct effects from construction of the new 400kV overhead line and modifications to the existing 400kV overhead line on its approach to Bramford Substation. A small working area around each pylon would be required and these would be accessed by temporary access routes. Most of the work is likely to be at ground level with some limited at-height working, including the use of mobile cranes. A temporary construction compound would be located slightly to the west of the substation and there would be temporary access routes and bellmouths.
- 3.2.17 The indirect effects would be localised loss of scenic quality, and sense of tranquillity/rural isolation. Movement of construction vehicles and plant along Bullen Lane and Church Hill would introduce some additional visual and noise disturbance outside the main working areas. These effects would, however, be short term and temporary and would be seen in the context of the large-scale infrastructure at Bramford Substation and converging overhead lines.
- 3.2.18 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the medium landscape sensitivity, the overall construction effects of the project on landscape within LCA 2a would be **minor adverse (not significant)**.

LCA 2b – Hintlesham

- 3.2.19 In LCA 2b there would be direct effects from the construction of the new 400kV overhead line, including the section to the north-west of Ramsey Wood, which is in an area currently unaffected by high voltage electricity infrastructure.
- 3.2.20 The effects of pylon construction, together with the associated bellmouths and temporary access routes would be short term and would require little vegetation removal. A small working area around each pylon would be required and these would be accessed by temporary access routes. Most of the work is likely to be at ground level with some limited at-height working, including the use of mobile cranes.
- 3.2.21 The indirect effects would be some localised loss of scenic quality, and sense of tranquillity/rural isolation in an area which is currently unaffected by high voltage electricity infrastructure. Movement of construction vehicles and plant along the A1071, The Street, Chattisham Lane, Duke Street, Pond Hill Road would introduce some additional visual and noise disturbance outside the main working areas. These effects would, however, be short term and temporary.
- 3.2.22 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be medium-small. Taking account of the medium landscape sensitivity, the overall anticipated construction effects of the project on the landscape within LCA 2b would be **minor adverse (not significant)**.

Operation Year 1

Main Project

LCA 2a – Bramford Substation

- 3.2.23 The landscape around Bramford Substation would be indirectly affected by the presence of the new 400kV overhead line and the modifications to the existing 400kV overhead line. This would slightly increase the proportion of available views occupied by overhead line infrastructure within LCA 2a but would be seen in the context of the large-scale infrastructure at Bramford Substation and the converging overhead lines.
- 3.2.24 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the medium landscape sensitivity, the overall operational effects of the project on the landscape within LCA 2a at Year 1 would be **minor adverse (not significant)**.

LCA 2b – Hintlesham

- 3.2.25 In LCA 2b there would be indirect effects on the landscape resulting from the presence of the new 400kV overhead line, including the section to the north-west of Ramsey Wood.
- 3.2.26 The new 400kV pylons would be seen in an area of rural farmland which is mostly unaffected by high voltage electricity infrastructure, although from much of LCA 2b the lower parts of the pylons would be seen against a backdrop of woodland which would reduce their perceptibility and effect on the visual character of the landscape. The pylons would be very noticeable when seen at close range and from elevated areas of LCA 2b such as west of Elmsett from which longer distance views are afforded.
- 3.2.27 The new section of 400kV overhead line to the north-west of Ramsey Wood, would extend the influence of high voltage electricity infrastructure across a greater geographical extent of LCA 2b, affecting the character of views and overall scenic quality. However, its location away from the edge of the plateau minimises its potential visibility in views into/out of the LCA. The woodlands which are characteristic feature of the landscape would also limit its visual effect on the landscape. With increasing distance, the pylons would be less perceptible.
- 3.2.28 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be medium within approximately 1km of the LoD, reducing to medium-small when experienced in the wider context of the LCA 2b. Taking account of the medium landscape sensitivity, the overall anticipated operational effects of the project on the landscape within LCA 2b at Year 1 would be **moderate adverse (significant)** locally within approximately 1km of the LoD, reducing to **minor adverse (not significant)** for LCA 2b as a whole.

Proposed Mitigation

Main Project

- 3.2.29 In addition to the embedded measures, the following planting for additional mitigation for biodiversity is proposed:
- New woodland planting between Wolves Wood and Ramsey Wood (MM09); and
 - New woodland planting south-west of Ramsey Wood (MM10).

Operation Year 15

Main Project

- 3.2.30 The following sub-section would experience a change to the level of effect predicted for Year 1.

LCA 2b – Hintlesham

- 3.2.31 The presence of a new section of 400kV overhead line would continue to extend the influence of high voltage electricity infrastructure within LCA 2b, affecting the character of views and overall scenic quality.
- 3.2.32 The screening and landscape integration of the lower parts of the pylons afforded by the existing woodlands would continue to increase through the growth of new woodland planting between Wolves Wood and Ramsay Wood (MM09) and south-west of Ramsey Wood (MM10). This maturing vegetation would increase the overall amount of woodland within LCA 2b and help to visually integrate both the existing 400kV and new 400kV overhead lines but would not alter the outcome of the assessment.
- 3.2.33 It is anticipated that the effect on the landscape would continue to be adverse but the magnitude of change would reduce to medium-small locally within approximately 1km of the LoD and small when experienced in the wider context of the LCA 2b. Taking account of the medium landscape sensitivity, the overall operational effects of the project on the landscape within LCA 2b at Year 15 would reduce slightly but the significance of effect would continue to be **moderate adverse (significant)** locally within approximately 1km of the LoD, reducing to **minor adverse (not significant)** for LCA 2b as a whole.

3.3 LCA 3: Suffolk Plateau Farmlands

Baseline

- 3.3.1 Within the study area, this LCA occurs in two locations. The smaller area lies to the east of the study area on the outskirts of Ipswich between the River Gipping to the north and Belstead Brook to the south and falls partly within the Gipping Valley SLA. The medium to large-scale arable farmland to the west of the area becomes smaller in scale and less rural in character close to the edge of the urban area. The hedgerow network is patchy and there are relatively few hedgerow trees. The only substantial woodland is associated with the A14 road corridor and Chantry Park. Several main roads including the A14 cross the LCA and its eastern edge is formed by the A1214. Other discordant elements include the existing 132kV overhead lines which converge close to the A1071.
- 3.3.2 The larger area lies to the south of the study area and is a plateau defined by the valleys of the River Stour to the south, the River Brett to the west and Sutton Brook to the north. It falls partly within the AONB. The farmland is predominantly in arable cultivation and displays a medium to large-scale pattern of fields bordered by intermittent hedgerows with hedgerow trees. Field amalgamation and hedgerow removal has created some areas of large-scale open farmland with long views. Smaller arable fields and pastures are mainly found around the edges of the settlements such as Holton St Mary and in association with the larger halls and farmsteads. Woodlands, particularly rectilinear plantation woodland, are a consistent feature of the farmland to the south-west of the B1070, with larger areas of woodland around Higham Lodge and along Hadleigh Road within the AONB. The settlement pattern is generally one of dispersed farmsteads and

small hamlets, with occasional larger villages connected by a network of lanes with tall hedgerows. The A12 locally affects the scenic quality of the landscape and sense of tranquillity/rural isolation.

Landscape Sensitivity

- 3.3.3 Part of this LCA falls within the AONB and the Gipping Valley SLA. Whilst this is an indicator of higher value, because of the judgements made against the indicators of landscape value listed in Table 3.7, which relate to the smaller part of this LCA near Ipswich rather than the larger area near Holton St Mary (which is further away from the project), the value of the LCA within the study area is considered to be medium.

Table 3.7 – Landscape Value of LCA 3

Factors used to Judge Value	Judgements on Value	
	Lower	Higher
Landscape character and quality		■
Scenic quality		■
Conservation interests		■
Recreation value	■	
Perceptual aspects and tranquillity		■
Associations	■	
Overall value	The overall value of this landscape is judged to be medium.	

- 3.3.4 Landscape characteristics which are more susceptible to loss or damage resulting from the project include the scenic parkland at Chantry Park and the more isolated and tranquil farmland around East Bergholt. Elsewhere, the larger scale farmland means that it is better able to accommodate the large size of the pylons without detrimental effects on landscape character whilst the plantations, shelterbelts, and tree lines within the LCA provide opportunities to screen and visually accommodate integrate the lower parts of the infrastructure into the landscape.
- 3.3.5 The presence of multiple distribution lines and main roads including the A12 and A14, and proximity to the urban area reduces the susceptibility of the landscape to the project as scenic quality and rural character has already been compromised.
- 3.3.6 Based on the above and the judgements made against indicators of landscape susceptibility listed in Table 3.8, which relate to the smaller area close to Ipswich, the susceptibility of the landscape is considered to be medium-low.

Table 3.8 – Landscape Susceptibility of LCA 3 to a New 400kV Overhead Line

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Holford Rules 4 & 5)		■
Landcover (Holford Rules 5 & 6)		■

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Scale	←————→	
Skylines (Holford Rule 4)	←————→	
Human influence	←————→	
Settlement pattern	←————→	
Overall susceptibility	The overall susceptibility of this landscape to a new 400kV overhead line is judged to be medium-low.	

3.3.7 When combined with the medium value, the sensitivity of the LCA to the project is considered to be medium.

Assessment of Effects

3.3.8 The landscape within this LCA would not be affected by construction and/or operation of the GSP substation which is therefore not considered.

3.3.9 The assessment of this LCA references two sub areas in order to capture the effects of the project in more detail. These are:

- LCA 3a – Sproughton; and
- LCA 3b – Holton St Mary.

Construction

Main Project

LCA 3a – Sproughton

3.3.10 There would be no direct effects on the landscape within LCA 3a from the dismantling and removal of the existing 132kV overhead line, construction of the new 400kV overhead line or modifications to the existing 400kV overhead line close to Bramford Substation, as they all lie outside the LCA.

3.3.11 Indirect effects would include slightly increased visual disturbance from construction traffic using the A1071. There may also be distant views out from LCA 3a towards construction of the new 400kV overhead line and modifications to the existing 400kV overhead line close to Bramford Substation, but the works would be barely perceptible with limited consequences for the baseline landscape within LCA 3a.

3.3.12 The upper parts of the equipment used for dismantling and removing the existing 132kV overhead line would be more noticeable, but the equipment would only be present at each pylon location for a short period of time and the effects would be temporary. Movement of construction vehicles and plant along the A1071 would introduce some additional visual and noise disturbance but this is in the context of the nearby urban edge of Ipswich and traffic movements on the A14. The works would also be seen in the context of the multiple existing 132kV overhead lines, which converge close to the A1071 and are a key characteristic of the landscape within this LCA.

- 3.3.13 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the medium landscape sensitivity, the overall construction effects of the project on the landscape within LCA 3a would be **minor adverse (not significant)**.

LCA 3b – Holton St Mary

- 3.3.14 There would be no direct effects on the landscape within LCA 3b within LCA 3a from the dismantling and removal of the existing 132kV overhead line, construction of the new 400kV overhead line or modifications to the existing 400kV overhead line close to Bramford Substation, as they all lie outside the LCA.
- 3.3.15 The only indirect construction effect would be the slightly increased visual disturbance from construction traffic using the B1070 close to the A12.
- 3.3.16 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be negligible. Taking account of the medium landscape sensitivity, the overall construction effects of the project on the landscape within LCA 2b would be **neutral (not significant)**.

Operation Year 1

Main Project

LCA 3a – Sproughton

- 3.3.17 There would be no direct effects on the landscape of LCA 3a from the presence of the new 400kV overhead line or the modifications to the existing 400kV overhead line close to Bramford Substation as they both lie outside the LCA.
- 3.3.18 The dismantling and removal of the existing 132kV overhead line would have a beneficial effect on views and the scenic quality of the landscape, but the benefits would be moderated by the presence of other existing 132kV overhead lines.
- 3.3.19 There may be some distant north-westerly views from the edge of LCA 3a towards the upper parts of the pylons on the new and modified 400kV overhead lines close to Bramford Substation. In most instances the intervening landform and vegetation would limit these views and the pylons would also be seen in the context of the substation infrastructure and converging overhead lines.
- 3.3.20 On balance, it is anticipated that the effect on the landscape would be beneficial and the magnitude of change would be small. Taking account of the medium landscape sensitivity, the overall operational effects of the project on the landscape within LCA 3a at Year 1 would be **minor beneficial (not significant)**.

LCA 3b – Holton St Mary

- 3.3.21 There would be no effects in LCA 3b from operation of the project. This is because it is highly unlikely that any component of the project would be perceptible due to the intervening landform and woodland. Therefore, there would be no change to the character of the landscape within LCA 3b and therefore **no effect**.

Operation Year 15

Main Project

LCA 3a – Sproughton

- 3.3.22 The removal of the existing 132kV overhead line would continue to have a beneficial effect on the landscape within LCA 3a.
- 3.3.23 It is anticipated that the magnitude of change would be small. Taking account of the medium landscape sensitivity, the overall operational effects of the project on the landscape within LCA 3a at Year 15 would be **minor beneficial (not significant)**.

LCA 3b – Holton St Mary

- 3.3.24 There would continue to be **no effect** from the project.

3.4 LCA 4: Suffolk Ancient Estate Claylands

Baseline

- 3.4.1 Within the study area, this LCA covers the edge of the indented clay plateau to the south-west of Ipswich and includes the settlements of Copdock, Capel St Mary, Chattisham and Raydon. The landscape around the edge of the LCA is covered by the Gipping Valley SLA and Brett Valley SLA and a very small part is within the AONB.
- 3.4.2 The LCA displays very similar characteristics to LCA 2 Ancient Plateau Claylands. It is a gently rolling plateau, incised by a series of river valleys, including the Brett Valley. These have divided the edge of the plateau into a series of interfluves. Much of the land is in arable cultivation with a pattern of medium to large fields. The fields are bordered by hedgerows which vary from species-rich and often historic to single-species hedgerows that are more tightly managed. Blocks of ancient semi-natural woodland are scattered throughout the area and together with the high coverage of hedgerow trees give a well-wooded character to the landscape. The disused railway, now the Hadleigh Railway Walk, creates a distinctive linear woodland belt across the LCA.
- 3.4.3 In the 20th century the flat farmland at Raydon was used for World War II airfields, which has left a legacy of runway remains and buildings, and some modern industrial land uses.
- 3.4.4 The settlement pattern consists of occasional villages and dispersed hamlets and farmsteads connected by a network of lanes. The farmsteads include multiperiod collections of buildings and some historic moated sites such as Cole's Green Farm, Birch House Farm, Moat Farm and Vauxhall. Shelterbelt planting sometimes including conifers or non-native species are often associated with these farmsteads and add to the character of the landscape.
- 3.4.5 Despite the relatively high woodland cover, the plateau landform means that in places there are often long and open views. However, elsewhere the network of winding lanes and tall hedges means that views are more contained and the landscape has an intimate quality.
- 3.4.6 Discordant elements include the existing 132kV and 400kV overhead lines which cross this LCA in several locations and the A12.

Landscape Sensitivity

- 3.4.7 Parts of this LCA are covered by the Gipping Valley SLA and Brett Valley SLA and a very small part is within the AONB. Together with the judgements made against indicators of landscape value listed in Table 3.9, this means that the value of the LCA within the study area is considered to be medium-high.

Table 3.9 – Landscape Value of LCA 4

Factors used to Judge Value	Judgements on Value	
	Lower	Higher
Landscape character and quality		
Scenic quality		
Conservation interests		
Recreation value		
Perceptual aspects and tranquillity		
Associations		
Overall value	The overall value of this landscape is judged to be medium-high.	

- 3.4.8 The characteristics of the landscape which cannot easily be replaced, and therefore are more susceptible to the loss or damage resulting from the project are the ancient semi-natural woodland, species-rich and often historic hedgerows, the greens and commons and the landscape around the historic settlements and farmsteads. These elements of the landscape are more typical of the parts of the LCA which fall within the AONB or SLA.

- 3.4.9 Away from the A12, much of the landscape has a rural and tranquil quality which could be diluted by the presence of more pylons, although the woodlands, shelterbelts, and tall hedgerows within the LCA provide opportunities to screen and visually integrate the lower parts of the pylons.

- 3.4.10 Areas of field amalgamation and the former WWII airfield are less susceptible as they are typically open and large in scale and scenic quality has already been reduced, although the airfields have unique cultural and historic features which are irreplaceable.

- 3.4.11 The presence of the existing 132kV and 400kV overhead lines and the A12 reduces the susceptibility of the LCA to the project as scenic quality and rural character has already been compromised.

Based on the above and the judgements made against indicators of landscape susceptibility listed in Table 3.10, the susceptibility of the landscape is considered to be medium.

Table 3.10 – Landscape Susceptibility of LCA 4 to a New 400kV Overhead Line

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Holford Rules 4 & 5)		

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landcover (Holford Rules 5 & 6)		■
Scale	■	
Skylines (Holford Rule 4)	■	
Human influence		■
Settlement pattern		■
Overall susceptibility	The overall susceptibility of this landscape to a new 400kV overhead line is judged to be medium.	

3.4.12 When combined with the high value, the sensitivity of the LCA to the project is considered to be medium-high.

Assessment of Effects

3.4.13 The landscape within this LCA would not be affected by construction and/or operation of the GSP substation which is therefore not considered.

Construction

Main Project

3.4.14 In LCA 4 there would be direct effects from the dismantling and removal of the existing 132kV overhead line, modifications to the existing 400kV overhead line and construction of the new section of 400kV overhead line as it aligns away from the existing 400kV overhead line to route around the north-western edge of Ramsey Wood through an area of farmland which is currently unaffected by high voltage electricity infrastructure.

3.4.15 The effects of pylon removal and construction, together with the associated bellmouths and temporary access routes would be short term and would require little vegetation removal. A small working area around each pylon would be required and these would be accessed by temporary access routes. Most of the work is likely to be at ground level with some limited at-height working, including the use of mobile cranes. Movement of construction vehicles and plant along Lower Barn Road, Chattisham Lane, Duke Street, Clay Hill, Pond Hill Road and Clay would introduce some additional visual and noise disturbance outside the main working areas. The indirect effects would be some localised loss of scenic quality, and sense of tranquillity/rural isolation. These effects would be focussed on the northern part of the LCA with much of the landscape within the LCA being unaffected.

3.4.16 These effects would, however, be short term and temporary and would be seen in the context of the existing overhead lines.

3.4.17 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the medium-high landscape sensitivity, the overall construction effects of the project on LCA 4 would be **minor adverse (not significant)**.

Operation Year 1

Main Project

- 3.4.18 The removal of the existing 132kV overhead line would reduce the amount and influence of high voltage electricity infrastructure across the northern part of the LCA. This would have an indirect beneficial effect on the landscape although to the west, although the benefits would be moderated by the presence of the existing 400kV overhead line.
- 3.4.19 The pylons on the new section of 400kV overhead line to the west of Hadleigh Bee Farm would be seen on the skyline alongside the existing 400kV pylons and would increase the proportion of the view occupied by overhead line infrastructure. This would affect the character of the views and there would be some localised loss of scenic quality, but the landscape is already affected by the presence of the existing 400kV overhead line. The effects would be focussed on the north-western part of the LCA where there is a high woodland and tree cover which would screen and visually integrate the lower parts of the pylons.
- 3.4.20 On balance, it is anticipated that the overall effect on the landscape would be beneficial and the magnitude of change would be medium-small. Taking account of the medium-high landscape sensitivity, the overall anticipated operational effects of the project on the landscape within LCA 4 at Year 1 would be **minor beneficial (not significant)**.

Operation Year 15

Main Project

- 3.4.21 There would be continued benefit from the removal of the existing 132kV overhead line and the magnitude of change would be medium-small. Taking account of the medium-high landscape sensitivity, the overall anticipated operational effects of the project on the landscape within LCA 4 at Year 15 would be **minor beneficial (not significant)**.

3.5 LCA 5: Suffolk Valley Meadowlands

Baseline

- 3.5.1 Within the study area, this LCA covers the narrow valley floors of the River Gipping upstream to Stowmarket, the River Brett upstream to Hadleigh, the River Box upstream to Boxford and the River Stour upstream to Sudbury. The valleys display a range of improved, semi-improved and unimproved grassland. Much of this LCA is covered by the AONB, SVPA, Gipping Valley SLA and a small part is within the Brett Valley SLA.
- 3.5.2 The flat valley floors comprise seasonally wet clays which has led to their long use as meadows for grazing rather than hay production. The meadows are divided by wet ditches or dykes that in places are lined by trees or overgrown and intermittent hedgerows. The introduction of effective drainage in the 20th century resulted in the conversion of many meadows to arable land although, more recently, arable land has been converted back to grazed pasture under agri-environmental schemes. In the wettest areas there are occasional small reedbeds or blocks of alder carr. Some of the older alder carrs still survive, but the decline in the value of meadows in the 20th century led to plantations, particularly of poplars or cricket-bat willows, being introduced into the valleys.

- 3.5.3 The LCA is typically unsettled except for a scattering of farmsteads on the higher ground. There are some historic moated sites including Boxted Hall, Shelley Hall and Smallbridge Hall in Bures St Mary.
- 3.5.4 Whilst some of the LCA landscapes are in excellent condition, others are affected by intakes into arable production, by horse grazing, inappropriate amenity planting and under-grazing. The sense of tranquillity/rural isolation of this landscape is also affected by development in the adjacent LCA 1 Suffolk Rolling Farmlands.
- 3.5.5 Other discordant elements include the existing 132kV and 400kV overhead lines that cross all of the valleys.

Landscape Sensitivity

- 3.5.6 Much of this LCA is within the AONB or SVPA, whilst other parts are covered by the Gipping Valley and Brett Valley SLA. Together with the judgements made against indicators of landscape value listed in Table 3.11, this means that the value of the LCA within the study area is considered to be high.

Table 3.11 – Landscape Value of LCA 5

Factors used to Judge Value	Judgements on Value	
	Lower	Higher
Landscape character and quality		
Scenic quality		
Conservation interests		
Recreation value		
Perceptual aspects and tranquillity		
Associations		
Overall value	The overall value of this landscape is judged to be high.	

- 3.5.7 Aspects of the landscape which are of higher susceptibility to the project include the strong visual relationship between the narrow valley floor and valley sides, which could be diminished by the presence of large pylons with adverse consequences for the character and quality of the landscape.
- 3.5.8 The high woodland and tree cover in some parts of the valleys provides opportunities to screen and visually integrate the lower parts of the project into the landscape.
- 3.5.9 The sense of enclosure and remoteness/rural isolation experienced in parts of the LCA is not easily replaceable and is therefore highly susceptible to visual disturbance.
- 3.5.10 Conversely, the presence of the existing 132kV and 400kV overhead lines, which cross this LCA in several locations, the larger-scale arable farmland, horse grazing and inappropriate amenity planting all reduce the susceptibility of the LCA to the project as they have already compromised scenic quality and rural character.

Based on the above and the judgements made against indicators of landscape susceptibility listed in Tables 3.12 – 3.14, the susceptibility of the landscape is considered to be high.

Table 3.12 – Landscape Susceptibility of LCA 5 to a New 400kV Overhead Line

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Holford Rules 4 & 5)		■
Landcover (Holford Rules 5 & 6)		■
Scale		■
Skylines (Holford Rule 4)	■	
Human influence	■	
Settlement pattern	■	
Overall susceptibility	The overall susceptibility of this landscape to a new 400kV overhead line is judged to be high.	

Table 3.13 – Landscape Susceptibility of LCA 5 to Underground Cables

Factors used to Judge Value	Judgements on Susceptibility	
	Lower	Higher
Landform	■	
Landcover and scale		■
Human influence	■	
Overall susceptibility	The overall susceptibility of this landscape to underground cables is judged to be medium-high.	

Table 3.14 – Landscape Susceptibility of LCA 5 to a CSE Compound/GSP Substation

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Horlock Rule 4)	■	
Landcover		■
Field pattern, scale and enclosure		■
Human influence	■	
Overall susceptibility	The overall susceptibility of this landscape to a CSE compound and/or GSP substation is judged to be medium-high.	

3.5.11 When combined with the high value, the sensitivity of the LCA to the project is considered to be high.

Assessment of Effects

- 3.5.12 This LCA falls outside the study areas for the GSP substation which is therefore not considered. The assessment of this LCA references four sub areas in order to capture the effects of the project in more detail. These are:
- LCA 5a – Gipping Valley
 - LCA 5b – River Brett;
 - LCA 5c – River Box; and
 - LCA 5d – River Stour.

Construction

Main Project

LCA 5a – River Gipping

- 3.5.13 There would be no direct effects on the landscape of LCA 5a from either the existing 132kV overhead line removal, construction of the new 400kV overhead line or the modifications to the existing 400kV overhead line close to Bramford Substation, as they all lie outside the LCA.
- 3.5.14 It is highly unlikely that construction activities around Bramford Substation would be perceptible from the Gipping Valley due to the intervening landform and woodland. The landscape would be subject, however, to some slightly increased visual and noise disturbance from construction traffic using the B1113 and Bullen Lane.
- 3.5.15 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be negligible. Taking account of the high landscape sensitivity, the overall construction effects of the project on the landscape within LCA 5a would be **neutral (not significant)**.

LCA 5b – River Brett

- 3.5.16 Within LCA 5b, there would be direct effects from dismantling and removal of one pylon on the existing 132kV overhead line on the western edge of the valley floor. The new 400kV overhead line would oversail this LCA and there would be views out from the valley floor to the east and west towards construction of the 400kV pylons in the neighbouring LCA 1c.
- 3.5.17 The effects of pylon removal and construction, together with the associated bellmouths and temporary access routes would be short term and would require little vegetation removal. A small working area around each pylon would be required and these would be accessed by temporary access routes. Most of the work is likely to be at ground level with some limited at-height working, including the use of mobile cranes.
- 3.5.18 The indirect effects would be some localised loss of scenic quality, and sense of tranquillity/rural isolation. These effects would be focussed on the northern part of the LCA with much of the landscape within the LCA being unaffected. Movement of construction vehicles and plant along the B1070 and Overbury Hall Road in the neighbouring LCA, would introduce some additional visual and noise disturbance.

- 3.5.19 The effects would also be short term and temporary and would be seen in the context of the existing overhead lines.
- 3.5.20 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the high landscape sensitivity, the overall construction effects of the project on the landscape within LCA 5b would be **minor adverse (not significant)**.

LCA 5c – River Box

- 3.5.21 The valley floor of the River Box in LCA 5c would be directly and indirectly affected by dismantling and removal of the existing 132kV overhead line which oversails the LCA, and construction of the 400kV underground cables. The existing 132kV pylons are located within the adjoining LCA 1, very close to the valley floor and the conductors span the valley.
- 3.5.22 The scale of the activities required to construct the components of the project, particularly the 400kV underground cables, would noticeably alter the appearance of the local landscape within the LoD between Homey Bridge and Beech Hill. The existing rural farmland would become a linear construction site across a working area on average 80m wide. Initial vegetation removal would be followed by the presence of working areas, temporary access routes, excavation of open-cut trenches and a concentration of construction equipment and activity. For assessment purposes, it is assumed that construction of the trenchless crossing under the Box Valley may include overnight working. This would require night time lighting of the working areas on both sides of the trenchless crossing but is likely to be an exceptional and infrequent occurrence.
- 3.5.23 On completion of the works, vegetation would be reinstated with the exception of trees which could not be replanted over the underground cables.
- 3.5.24 The indirect effects on the landscape resulting from the construction activities would include a loss of scenic quality, and sense of tranquillity/rural isolation. Due, however, to the rolling landform and high woodland and tree cover, the effect on the character of the landscape within LCA 5c would be localised and the trenchless crossing of the Box Valley would substantially lessen the effects on the landscape of the valley floor, although there would still be a requirement for access across the river. The effects would also be short term and temporary and would be seen in the context of the existing overhead lines.
- 3.5.25 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be large within approximately 1km of the LoD, reducing to small when experienced in the wider context of the LCA 5c. Taking account of the high landscape sensitivity, the overall construction effects of the project on the landscape within LCA 5c would be **major adverse (significant)** locally within approximately 1km of the LoD, reducing to **minor adverse (not significant)** for LCA 5c as a whole.

LCA 5d – River Stour

- 3.5.26 The valley floor of the River Stour in LCA 5d would be directly affected by the dismantling and removal of one pylon on the existing 132kV overhead line and temporary access routes. Whilst the indirect effects of this work would be very limited, the LCA would also be indirectly affected by construction activities associated with the 400kV underground cables/trenchless crossings, Stour Valley East CSE compound, construction compounds and movement of vehicles and plant along access tracks in the adjoining LCA 1e and LCA 7. These activities would reduce scenic quality across the valley floor and introduce

visual and noise disturbance into the valley floor, which would compound the effects of intermittent trains. Movement of construction vehicles and plant along the B1508, Colchester Road, Lamarsh Hill, Springer's Hill, Bell Hill, Henny Road, Henny Street, Clay Hill and Middleton Road (some of which are in the adjoining LCA) would introduce additional visual and noise disturbance outside the main working area.

- 3.5.27 For the purposes of the assessment it is assumed that construction of the trenchless crossing under the River Stour and the Sudbury Branch Railway Line (partly within LCA 7) may include overnight working. This would require night time lighting of the working areas on both sides of the trenchless crossings but is likely to be an exceptional and infrequent occurrence.
- 3.5.28 Although the effects be short term and temporary, it is anticipated that the effect on the landscape would be adverse and the magnitude of change would be medium. Taking account of the high landscape sensitivity, the overall construction effects of the project on the landscape within LCA 5d would be **moderate adverse (significant)**.

Operation Year 1

Main Project

LCA 5a – River Gipping

- 3.5.29 There would be no effects on LCA 5a from operation of the project. This is because it is highly unlikely that the changes around Bramford Substation would be perceptible from the Gipping Valley due to the intervening landform and woodland. Therefore, there would be no change to the landscape within LCA 5a from the project at Year 1 and therefore **no effect**.

LCA 5b – River Brett

- 3.5.30 The removal of the existing 132kV overhead line and presence of the new 400kV overhead line would introduce noticeably larger pylons along broadly the same route as the existing 132kV overhead line. The new 400kV pylons would increase the influence of high voltage electricity infrastructure within LCA 5b. This would increase the influence of the existing 400kV overhead line between Layham and Hadleigh, resulting in a slight reduction in scenic quality.
- 3.5.31 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be small. Taking account of the high landscape sensitivity, the overall operational effects of the project on the landscape within LCA 5b at Year 1 would be **minor adverse (not significant)**.

LCA 5c – River Box

- 3.5.32 The removal of the existing 132kV overhead line in association with the 400kV underground cables and trenchless crossing of the Box Valley would reduce the extent and influence of high voltage electricity infrastructure on a part of the LCA which lies completely within the AONB and have a beneficial effect on the small-scale wooded valley of the River Box and the wider parkland landscape of Polstead Park. There would be no noticeable effects on the landscape from the cable joints and link pillars associated with the 400kV underground cables.

3.5.33 The degree of beneficial effect from removing the existing 132kV pylons must be balanced against the continued presence of the existing 400kV overhead line and the immediate post-construction effects of installing the 400kV underground cables, which would continue to adversely affect the landscape. At Year 1, the removal and reinstatement of temporary construction compounds, working areas and access routes would reduce the overall perceptible disturbance. Vegetation would be reinstated along the former construction corridor as described in the LEMP (**application document 7.8**) but at Year 1 this planting would be immature and the areas previously used for construction would appear as a linear swathe within the rural farmland. The absence of trees, which were removed during construction, would also be noticeable and locally affect the character of the landscape. Due, however, to the low-level nature of the effects and the high tree and woodland cover in and around the Box Valley, the extent of the indirect effects on the visual character and scenic quality of the landscape would be very localised.

3.5.34 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be medium-small. Taking account of the high landscape sensitivity, the overall operational effects of the project on the landscape within LCA 5c at Year 1 would be **minor adverse (not significant)**.

LCA 5d – River Stour

3.5.35 The removal of the existing 132kV overhead line in association with the trenchless crossings under the River Stour and Sudbury Branch Railway Line, would have a beneficial effect on views and the scenic quality of the landscape.

3.5.36 The degree of beneficial effect has to be balanced against the continued presence of the existing 400kV overhead line within the LCA but the prominence of the 400kV pylons is reduced by existing woodland and maturing plantation within the valley floor between Henny Road and the B1508 St Edmund's Hill, which reduces its effect on this part of the LCA. It also has to be balanced against the immediate post-construction effects of the undergrounding in the neighbouring LCA 1e, which would continue to adversely affect the landscape. At Year 1, the removal and reinstatement of temporary construction compounds, working areas and access routes, would reduce the overall perceptible disturbance. Vegetation would be reinstated along the former construction corridor as described in the LEMP (**application document 7.8**) but at Year 1 this planting would be immature and the areas previously used for construction would appear as a linear swathe within the rural farmland. The absence of trees, which were removed during construction, would also be noticeable and locally affect the character of the landscape. Due to the low-level nature of the effects and the high woodland and tree cover, the effects on the landscape would be localised.

3.5.37 At Year 1, the embedded planting around the Stour Valley East CSE compound would be too immature to provide any screening or visual integration of the infrastructure. Its presence would therefore also have an adverse effect on the landscape within LCA 5d.

3.5.38 It is anticipated that on balance, the effect on the landscape would be beneficial and the magnitude of change would be medium-small. Taking account of the high landscape sensitivity, the overall effects of the project on the landscape within LCA 5d at Year 1 would be **minor beneficial (not significant)**.

Operation Year 15

Main Project

LCA 5a – River Gipping

- 3.5.39 There would continue to be **no effect** on the landscape of LCA 5a from operation of the project.

LCA 5b – River Brett

- 3.5.40 The removal of the existing 132kV and presence of the new 400kV overhead line along broadly the same alignment would continue to have an overall adverse effect on the landscape within this LCA.

- 3.5.41 It is anticipated that the magnitude of change would be small. Taking account of the high landscape sensitivity, the overall operational effects of the project on the landscape within LCA 5b at Year 15 would be **minor adverse (not significant)**.

LCA 5c – River Box

- 3.5.42 By Year 15, the reinstatement planting associated with the 400kV underground cables in LCA 5c would be maturing and the landscape would be returning to its existing character. The adverse effects on the landscape predicted at Year 1 would diminish and the beneficial effects of removing the existing 132kV overhead line would be increasingly experienced.

- 3.5.43 It is anticipated that the effect on the landscape would be beneficial and the magnitude of change would be medium locally within approximately 1km of the LoD, reducing to small when experienced in the wider context of the LCA 5c. Taking account of the high landscape sensitivity, the overall operational effects of the project on the landscape within LCA 5c at Year 15 would be **moderate beneficial (significant)** locally within approximately 1km of the LoD, reducing to **minor beneficial (not significant)** for LCA 5c as a whole.

LCA 5d – River Stour

- 3.5.44 The removal of the existing 132kV overhead line in association with underground cables and the trenchless crossings under the River Stour and Sudbury Branch Railway Line would continue to have a beneficial effect on the landscape within this LCA. By Year 15, the reinstatement planting associated with the 400kV underground cables in the neighbouring LCA 1e would be maturing and the landscape would be returning to its existing character. Similarly, the embedded planting around the Stour Valley East CSE compound in LCA 1e, would be maturing and both screen the infrastructure and integrate it into the wider landscape. This would reduce its effect on views out from LCA 5d.

- 3.5.45 It is anticipated that the effect on the landscape would be beneficial and the magnitude of change would increase to medium. Taking account of the high landscape sensitivity, the overall effects of the project on the landscape within LCA 5d at Year 15 would be **moderate beneficial (significant)**.

3.6 LCA 6: Suffolk Ancient Rolling Farmlands

Baseline

- 3.6.1 Within the study area, this LCA occurs between Polstead and Leavenheath and includes the broad interfluves between the River Brett, the River Box and the River Stour. Parts of the LCA are covered by the AONB, SVPA, Brett Valley SLA, Box Valley SLA and Stour Valley SLA.
- 3.6.2 The farmland much of the LCA retains much of the organic pattern of ancient and species-rich hedgerows with associated ditches. The hedges are frequently high and wide and have a strong visual influence. Although there are some areas of field amalgamation and hedgerow loss, as noted in the Suffolk Landscape Character Assessment (Suffolk County Council, 2011), the narrowness of the interfluvial area has reduced the scope for extensive field amalgamation found elsewhere in the county.
- 3.6.3 Woodlands are typically ancient semi-natural in origin and those in the southern half of the western area, for example Groton Wood have an unusually high proportion of small-leaved lime. Some of the woodland blocks are larger than the surrounding fields and together with the tall hedgerows and high coverage of hedgerow trees contribute to the well-wooded character of the landscape. Orchards are a much more prominent land use to the south of a line between Hadleigh and Sudbury.
- 3.6.4 Placenames such as Leavenheath and Polstead Heath attest to the presence of former heathlands which were enclosed in the 18th and 19th centuries.
- 3.6.5 The settlement pattern is one of dispersed farmsteads of medieval origin interspersed with some larger hamlets and occasional villages. These are connected by a network of winding lanes with wide verges often associated with species-rich hedges that, together with the rolling countryside, can give a feeling of intimacy.
- 3.6.6 Overall, the landscape is largely intact, although there are areas where development pressure and land use change, for example horse grazing, have diluted the rural character of the landscape. These are especially noticeable on the outskirts of Sudbury. The existing 132kV and 400kV overhead lines are also a note of discord in the landscape.
- 3.6.7 It should be noted that only the sections of this LCA within Suffolk are considered below. There is an overlap with Essex C7 Blackwater/ Stour Farmland, which follows broadly the same areas as LCA 6, and is assessed as LCA 7 to avoid double counting.

Landscape Sensitivity

- 3.6.8 Within the study area, parts of this LCA are covered by the AONB, Brett Valley SLA, Box Valley SLA and Stour Valley SLA. They are also within the SVPA. Together with the judgements made against indicators of landscape value listed in Table 3.15, this means that the value of the LCA within the study area is considered to be medium.

Table 3.15 – Landscape Value of LCA 6

Factors used to Judge Value	Judgements on Value	
	Lower	Higher
Landscape character and quality	←————→	
Scenic quality	←————→	
Conservation interests	←————→	
Recreation value	←————→	
Perceptual aspects and tranquillity	←————→	
Associations	←————→	
Overall value	The overall value of this landscape is judged to be medium.	

3.6.9 The characteristics of the landscape which cannot easily be replaced and therefore are more susceptible to the loss or damage resulting from the project are the ancient semi-natural woodland, species-rich hedgerows, and village greens. Areas of field amalgamation are less susceptible as fewer trees or hedgerows would be lost and scenic quality has already been diminished by the loss of hedgerows and hedgerow trees. Away from the edge of Sudbury, the landscape has an attractive rural and tranquil quality which is susceptible to visual intrusion and noise disturbance. The woodland, shelterbelts, and tall hedgerows within the LCA provide opportunities to screen and visually integrate the lower parts of the project into the landscape.

3.6.10 Conversely, the existing 132kV and 400kV overhead lines reduce the susceptibility of the LCA to the project as they have already compromised scenic quality and rural character. Based on the above and the judgements made against indicators of landscape susceptibility listed in Tables 3.16 – 3.18, the susceptibility of the landscape is considered to be medium.

Table 3.16 – Landscape Susceptibility of LCA 6 to a New 400kV Overhead Line

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Holford Rules 4 & 5)	←————→	
Landcover (Holford Rules 5 & 6)	←————→	
Scale	←————→	
Skylines (Holford Rule 4)	←————→	
Human influence	←————→	
Settlement pattern	←————→	
Overall susceptibility	The overall susceptibility of this landscape to a new 400kV overhead line is judged to be medium.	

Table 3.17 – Landscape Susceptibility of LCA 6 to Underground Cables

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform	←————→	
Landcover and scale	←————→	
Human influence	←————→	
Overall susceptibility	The overall susceptibility of this landscape to underground cables is judged to be medium.	

Table 3.18 – Landscape Susceptibility of LCA 6 to a CSE Compound/GSP Substation

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Horlock Rule 4)	←————→	
Landcover	←————→	
Field pattern, scale and enclosure	←————→	
Human influence	←————→	
Overall susceptibility	The overall susceptibility of this landscape to a CSE compound and/or GSP substation is judged to be medium-low.	

3.6.11 When combined with the medium value, the sensitivity of the LCA to the project is considered to be medium.

Assessment of Effects

3.6.12 The landscape within this LCA would not be affected by construction and/or operation of the GSP substation which is therefore not considered.

3.6.13 The assessment of this large LCA references two sub areas in order to capture the effects of the project in more detail. These are:

- LCA 6a – Polstead Heath; and
- LCA 6b – Leavenheath.

Construction

Main Project

LCA 6a – Polstead Heath

3.6.14 The landscape in LCA 6a would be directly affected by the dismantling and removal of the existing 132kV overhead line and construction of the new 400kV overhead line. It would also be directly affected by construction of the Dedham Vale East CSE compound and the 400kV underground cables.

- 3.6.15 The effects of pylon removal and construction, together with the associated bellmouths and temporary access routes would be short term and would require little vegetation removal. A small working area around each pylon would be required and these would be accessed by temporary access routes. Most of the work is likely to be at ground level with some limited at-height working, including the use of mobile cranes. The indirect effects would be some localised loss of scenic quality, but this is in an area where scenic quality has already been compromised by existing overhead lines. These effects would, however, be short term and temporary.
- 3.6.16 The scale of the activities required to construct the Dedham Vale East CSE compound and the 400kV underground cables, would noticeably alter the appearance of the landscape within the LoD between Polstead Heath and Broom Hill. The existing rural farmland would become a linear construction site across a working area wide. Initial vegetation removal would be followed by the presence of working areas, temporary access routes, excavation of opencut trenches and a concentration of construction equipment and activity. On completion of the works, vegetation would be reinstated with the exception of trees which could not be replanted over the underground cables.
- 3.6.17 The indirect effects on the landscape resulting from the construction activities would include a loss of scenic quality, and sense of tranquillity/rural isolation. Movement of construction vehicles and plant along the A1071, Rands Road, Stackwood Road, Millward Road, Heath Road, Holt Road, Hadleigh Road, would introduce some visual disturbance outside the main working area. These effects would, however, be short term and temporary and would be seen in the context of the existing overhead lines.
- 3.6.18 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be large within approximately 1km of the LoD, reducing to small when experienced in the wider context of the LCA 6a. Taking account of the medium landscape sensitivity, the overall construction effects of the project on the landscape within LCA 6a would be **major adverse (significant)** locally within approximately 1km of the LoD, reducing to **minor adverse (not significant)** for LCA 6a as a whole.

LCA 6b – Leavenheath

- 3.6.19 The landscape across much of LCA 6b would be directly affected by the dismantling and removal of the existing 132kV overhead line and construction of the new 400kV overhead line. A small working area around each pylon would be required and these would be accessed by temporary access routes. Most of the work is likely to be at ground level with some limited at-height working, including the use of mobile cranes. The effects of pylon removal and construction, together with the associated bellmouths, temporary access routes and a temporary construction compound would be short term and reversible. Due to the high coverage of woodlands, not all of which could be avoided during the routeing process, some tree and shrub removal would be required.
- 3.6.20 The landscape in the eastern part of the LCA would also be directly affected by construction of the 400kV underground cables and the Dedham Vale West CSE compound, whilst the western edge of LCA 6b would be directly affected by construction of a very short section of 400kV underground cables and indirectly affected by construction of the Stour Valley East CSE compound and underground cables in the neighbouring LCA 1e.
- 3.6.21 The scale of the activities required to construct the Dedham Vale West CSE compound and the 400kV underground cables, would noticeably alter the appearance of the

landscape within the LoD. The existing rural farmland would become a linear construction site a working area on average 80m wide. Initial vegetation removal would be followed by the presence of working areas, temporary access routes, excavation of open-cut trenches and a concentration of construction equipment and activity. On completion of the works, vegetation would be reinstated with the exception of trees which could not be replanted over the underground cables.

- 3.6.22 The indirect effects on the landscape resulting from the construction activities would include a loss of scenic quality, and sense of tranquillity/rural isolation. Movement of construction vehicles and plant along the A134, A1071, B1068, The Street, High Road, and Brick Kiln Lane would introduce some visual disturbance outside the main working area. There would also be indirect effects on the quality of views out from the western edge of the LCA, due to the presence of large-scale construction activities associated with the 400kV underground cables and Stour Valley East CSE compound in the adjoining LCA 1e.
- 3.6.23 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be large within approximately 1km of the LoD, reducing to small when experienced in the wider context of the LCA 6b. Taking account of the medium landscape sensitivity, the overall construction effects of the project on the landscape within LCA 6b would be **major adverse (significant)** locally within approximately 1km of the LoD, reducing to **minor adverse (not significant)** for LCA 6b as a whole.

Operation Year 1

Main Project

LCA 6a – Polstead Heath

- 3.6.24 Within the eastern part of LCA 6a, the presence of the new 400kV overhead line when seen alongside the existing 400kV overhead line would increase the influence of high voltage electricity infrastructure but would not fundamentally alter the character of the landscape. Also, due to the rolling landform and screening afforded by the high coverage of woodland and trees, only the upper parts of the pylons would be evident in most longer distance views. Dedham Vale East CSE compound would be discreetly located between areas of woodland at Millfield Wood, which would substantially lessen its effect on the landscape.
- 3.6.25 Within the western part of LCA 6a, the removal of the existing 132kV overhead line in association with the 400kV underground cables, would reduce the extent and influence of high voltage electricity infrastructure and have a beneficial effect on a part of the LCA which lies completely within the AONB. There would be no noticeable effects on the landscape from the cable joints and link pillars associated with the 400kV underground cables.
- 3.6.26 The degree of beneficial effect from removing the existing 132kV pylons must be balanced against the continued presence of the existing 400kV overhead line and the immediate post-construction effects of the undergrounding, which would still be likely to have an adverse effect on the landscape. At Year 1, the removal and reinstatement of temporary construction compounds, working areas and access routes would reduce the overall perceptible disturbance. Vegetation would be reinstated along the former construction corridor as described in the LEMP (**application document 7.8**) but at Year 1 this planting would be immature and the areas previously used for construction would

appear as a linear swathe within the rural farmland. The absence of trees which were removed during construction would also be noticeable and locally affect the character of the landscape. Due, however, to the low-level nature of the effects and the high tree and woodland cover, the extent of the indirect effects on the visual character and scenic quality of the landscape would be localised.

- 3.6.27 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be medium locally within approximately 1km of the LoD, reducing to small when experienced in the wider context of the LCA 6a. Taking account of the medium landscape sensitivity, the overall operational effects of the project on the landscape within LCA 6a at Year 1 would be **moderate adverse (significant)** locally within approximately 1km of the LoD, reducing to **minor adverse (not significant)** for LCA 6a as a whole.

LCA 6b – Leavenheath

- 3.6.28 Within the eastern and western parts of LCA 6b, the removal of the existing 132kV overhead line in association with the 400kV underground cables, would reduce the extent and influence of high voltage electricity infrastructure and have a beneficial effect on a part of the LCA. There would be no noticeable effects on the landscape from the cable joints and link pillars associated with the 400kV underground cables.
- 3.6.29 Although there would be views out from the western edge of LCA 6b towards the Stour Valley East CSE compound in the adjoining LCA 1e (Section 2.2), the location of the CSE compound in the upper reaches of a wooded tributary valley of the River Stour, would substantially lessen its effects on the landscape.
- 3.6.30 The degree of beneficial effect from removing the existing 132kV pylons must be balanced against the continued presence of the existing 400kV overhead line and the immediate post-construction effects of the undergrounding, which would still be likely to have an adverse effect on the landscape. At Year 1, the removal and reinstatement of temporary construction compounds, working areas and access routes would reduce the overall perceptible disturbance. Vegetation would be reinstated along the former construction corridor as described in the LEMP (**application document 7.8**) but at Year 1 this planting would be immature and the areas previously used for construction would appear as a linear swathe within the rural farmland. The absence of trees which were removed during construction would also be noticeable and locally affect the character of the landscape. Due, however, to the low-level nature of the effects and the high tree and woodland cover, the extent of the indirect effects on the visual character and scenic quality of the landscape would be localised.
- 3.6.31 Dedham Vale West CSE compound would be located in an area of open farmland and the embedded planting would be too immature to provide any screening or visual integration of the infrastructure into the landscape. Its presence would therefore also have an adverse effect on the landscape within LCA 6b.
- 3.6.32 Across much of the central part of LCA 6b there would be indirect adverse effects on the landscape resulting from the presence of the new 400kV overhead line, which would be aligned broadly parallel and to the south of the existing 400kV overhead line. The larger 400kV pylons would increase the influence of high voltage electricity infrastructure in LCA 6b but would not fundamentally alter the character of the landscape. Also, due to the screening afforded by the surrounding blocks of woodland, only the upper parts of the pylons would be evident in most longer distance views, which would limit its effect on the wider landscape of the LCA.

- 3.6.33 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be medium within approximately 1km of the LoD, reducing to small when experienced in the wider context of the LCA 6b. Taking account of the medium landscape sensitivity, the overall operational effects of the project on the landscape within LCA 6b at Year 1 would be **moderate adverse (significant)** locally within approximately 1km of the LoD, reducing to **minor adverse (not significant)** for LCA 6b as a whole.

Operation Year 15

Main Project

LCA 6a – Polstead Heath

- 3.6.34 The removal of the existing 132kV and presence of the new 400kV overhead line along broadly the same alignment would continue to have an overall adverse effect on the landscape within this LCA.
- 3.6.35 By Year 15, the reinstatement planting associated with the 400kV underground cables in LCA 6a would be maturing and the landscape would be returning to its existing character. The adverse effects on the landscape predicted at Year 1 would diminish and the beneficial effects of dismantling and removing the existing 132kV overhead line would be increasingly experienced. Similarly, the embedded planting around Dedham Vale East CSE compound would be maturing and would begin to both screen and visually integrate it into the wider landscape.
- 3.6.36 It is anticipated that the effect on the landscape would be adverse but the magnitude of change would reduce to medium-small locally within approximately 1km of the LoD and remain small when experienced in the wider context of the LCA 6b. Taking account of the medium landscape sensitivity, the overall operational effects of the project on the landscape within LCA 6a at Year 15 would be **minor adverse (not significant)** both locally and across LCA 6a as a whole.

LCA 6b – Leavenheath

- 3.6.37 The removal of the existing 132kV and presence of the new 400kV overhead line along broadly the same alignment would continue to have an overall adverse effect on the landscape within this LCA.
- 3.6.38 By Year 15, the reinstatement planting associated with the 400kV underground cables in LCA 6b would be maturing and the landscape would be returning to its existing character. The adverse effects on the landscape predicted at Year 1 would diminish and the beneficial effects of removing the existing 132kV overhead line would be increasingly experienced. Similarly, the embedded planting around Dedham Vale West CSE compound would begin to both screen and visually integrate it into the wider landscape.
- 3.6.39 It is anticipated that the effect on the landscape would be adverse but the magnitude of change would reduce to medium-small locally within approximately 1km of the LoD and remain small when experienced in the wider context of the LCA 6b. Taking account of the medium landscape sensitivity, the overall operational effects of the project on the landscape within LCA 6b at Year 15 would be **minor adverse (not significant)** both locally and across LCA 6b as a whole.

3.7 LCA 7: Essex C8 Stour Valley

Baseline

- 3.7.1 Within the study area, this LCA occurs to the west and south of the River Stour between Sudbury in the north and Boxted to the south. It lies to the west of the Suffolk Valley Meadowlands (LCT 5) and Suffolk Rolling Valley Farmlands (LCA 1) with which it shares similar characteristics. The LCA is almost entirely within the AONB and the SVPA.
- 3.7.2 The Stour Valley floor is broad and relatively flat for much of its length. Rolling rounded valley sides contain a complex mosaic of small woods, pasture and arable fields in the east with arable farmland on the gentler valley sides in the north and west. The wetter soils of the valley floor typically support grazed meadows bordered by hedgerows and/or wet ditches with plantations of cricket bat willows and hybrid poplars.
- 3.7.3 Traditional small settlements and isolated farmsteads with limited modern development occur throughout the area. These are linked by a network of narrow, sometimes sunken lanes. Where the landscape is more open, there are panoramic views across and along the valley towards distinctive landmarks such as church towers, and traditional villages or buildings. In more enclosed parts, views are more contained and focused. Away from the busier roads such as Henny Road, the area has an undeveloped and tranquil rural character.
- 3.7.4 Discordant elements include the existing 132kV overhead line and 400kV overhead lines are prominent, particularly around the diamond crossing and Twinstead Tee where they converge.

Landscape Sensitivity

- 3.7.5 The part of the LCA within the study area falls almost entirely within the SVPA. Together with the judgements made against indicators of landscape value listed in Table 3.19, this means that the value of the LCA within the study area is considered to be high.

Table 3.19 – Landscape Value of LCA 7

Factors used to Judge Value	Judgements on Value	
	Lower	Higher
Landscape character and quality		
Scenic quality		
Conservation interests		
Recreation value		
Perceptual aspects and tranquillity		
Associations		
Overall value	The overall value of this landscape is judged to be high.	

- 3.7.6 Aspects of the landscape which are of higher susceptibility to the project include the strong visual relationship between the valley sides and the valley floor, which could be

diminished by the presence of large pylons with adverse consequences for the character and quality of the landscape within the LCA.

- 3.7.7 Other aspects of the project which are susceptible to the loss or damage resulting from the project are the small-scale rolling landform of the valley side and with its complex mosaic of small woods, pasture and arable fields. Similarly, the meadows and sense of enclosure and tranquillity within parts of the valley floor are not easily replaceable and are therefore susceptible to loss or damage. Away from the busier roads, the landscape has an attractive rural and tranquil quality which is susceptible to visual intrusion and noise disturbance. The plantations and woodlands within the LCA provide opportunities to screen and visually integrate the lower parts of the project into the landscape.
- 3.7.8 Conversely, the presence of the existing 132kV and 400kV overhead lines, larger scale arable farmland, horse grazing and inappropriate amenity planting reduces the susceptibility of the LCA to the project as they have already compromised scenic quality and rural character.
- 3.7.9 Based on the above and the judgements made against indicators of landscape susceptibility listed in Tables 3.20 – 3.21, the susceptibility of the landscape is considered to be medium.

Table 3.20 – Landscape Susceptibility of LCA 7 to a New 400kV Overhead Line

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Holford Rules 4 & 5)		■
Landcover (Holford Rules 5 & 6)		■
Scale		■
Skylines (Holford Rule 4)		■
Human influence	■	
Settlement pattern		■
Overall susceptibility	The overall susceptibility of this landscape to a new 400kV overhead line is judged to be medium-high.	

Table 3.21 – Landscape Susceptibility of LCA 7 to Underground Cables

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform		■
Landcover and scale		■
Human influence		■
Overall susceptibility	The overall susceptibility of this landscape to underground cables is judged to be medium.	

- 3.7.10 When combined with the high value, the sensitivity of the LCA to the project is considered to be high.

Assessment of Effects

- 3.7.11 The landscape within this LCA would not be affected by construction and/or operation of the GSP substation which is therefore not considered.
- 3.7.12 Construction of the Stour Valley West CSE compound in the neighbouring LCA 8 would have limited effect on most of the landscape within LCA 7 due to the high surrounding vegetation cover. It is not therefore included in the assessment of LCA 7.

Construction

Main Project

- 3.7.13 There would be direct effects from the dismantling and removal of the existing 132kV overhead line and a section of the existing 400kV overhead line to the south of the diamond crossing, and by modifications to the existing 400kV overhead line including the Twinstead Tee. There would also be direct effects from construction of the 400kV underground cables and trenchless crossings under the River Stour, Sudbury Branch Railway Line and to the south of Ansell's Grove.
- 3.7.14 The effects of pylon removal and construction, together with the associated bellmouths and temporary access routes would be short term and would require little vegetation removal. A small working area around each pylon would be required and these would be accessed by temporary access routes. Most of the work is likely to be at ground level with some limited at-height working, including the use of mobile cranes.
- 3.7.15 The indirect effects would be some localised loss of scenic quality, and sense of tranquillity/rural isolation. Movement of construction vehicles and plant along the A1071, Rands Road, Stackwood Road, Millward Road, Heath Road, Holt Road, Hadleigh Road, would introduce some visual disturbance outside the main working area.
- 3.7.16 For assessment purposes, it is assumed that construction of the trenchless crossings under the River Stour, Sudbury Branch Railway Line and to the south of Ansell's Grove may include overnight working. This would require night time lighting of the working areas on both sides of the trenchless crossings but is likely to be an exceptional and infrequent occurrence.
- 3.7.17 These effects would, however, be short term and temporary and would be in the context of the existing overhead lines.
- 3.7.18 The scale of the activities required to construct the different components of the project, particularly the 400kV underground cables, would noticeably alter the appearance of the local landscape within the LoD north of Lamarsh. The existing rural farmland would become a linear construction site across a working area on average 80m wide. Initial vegetation removal, including areas of woodland, and heathland and shrubs west of Moat Lane would be followed by the presence of two construction compounds, working areas, temporary access routes, temporary bridges, excavation of open-cut trenches and trenchless crossing compounds and a concentration of construction equipment and activity. On completion of the works, vegetation would be reinstated with the exception of trees which could not be replanted over the underground cables.

- 3.7.19 Indirect effects on the landscape resulting from these construction activities would include a loss of scenic quality, and sense of tranquillity/rural isolation. The openness of the valley floor means that construction activities in the adjacent LCA 1e and LCA 5d would also affect views out from LCA 7. The works would be widely visible in views across the valley but the presence of alder carr and plantations of poplars or cricket-bat willows within the valley floor east of the River Stour in the adjoining LCA 5 would limit the geographical extent of the effects on views along the valley. Most of the lower-level works would not be very noticeable in longer distance views to the north and south. Movement of construction vehicles and plant along the Colchester Road, Lower Road, Sandy Hill, Colne Road, Lamarsh Hill, Springer's Hill, Bell Hill, Henny Road, Henny Street, Church Road, Clay Hill, Middleton Road and the A131 would introduce some visual disturbance outside the main working areas.
- 3.7.20 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be large within approximately 1km of the LoD, reducing to small when experienced in the wider context of the LCA 7. Taking account of the high landscape sensitivity, the overall anticipated construction effects of the project on the landscape within LCA 7 would be **major adverse (significant)** locally within approximately 1km of the LoD, reducing to **minor adverse (not significant)** for LCA 7 as a whole.

Operation Year 1

Main Project

- 3.7.21 The removal of the existing 132kV overhead line in association with the 400kV underground cables and trenchless crossings, would reduce the extent and influence of high voltage electricity infrastructure on a part of the LCA which lies completely within the SVPA. There would be no noticeable effects on the landscape from the cable joints and link pillars associated with the 400kV underground cables.
- 3.7.22 The Stour Valley West CSE compound within LCA 1e would be discreetly located in an area of lower lying ground adjacent to woodland on Henny Back Road, which would substantially lessen its effect on easterly views out from LCA 7.
- 3.7.23 The degree of beneficial effect has to be balanced against the continued presence of the existing 400kV overhead line within the LCA but the prominence of the existing 400kV pylons is reduced by woodland along a tributary valley of the River Stour and within the valley floor of the river around Daw's Hall, which reduces its effect on this part of the LCA.
- 3.7.24 The degree of beneficial effect also has to take account of the immediate post-construction effects of the undergrounding, which would still be likely to have an adverse effect on the landscape. At Year 1, the removal and reinstatement of temporary construction compounds, working areas and access routes would reduce the overall perceptible disturbance. Vegetation would be reinstated along the former construction corridor as described in the LEMP (**application document 7.8**) but at Year 1 this planting would be immature and the areas within the LoD for construction would appear as a linear swathe within the rural farmland. The absence of trees which were removed during construction would also be noticeable and locally affect the character of the landscape, particularly the well-wooded and small-scale farmland on the western valley side. Due, however, to the low-level nature of the effects and the high tree and woodland cover which characterises the landscape within this part of the LCA, the effects on the landscape would be localised.

- 3.7.25 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be medium-small locally within approximately 1km of the LoD, reducing to negligible when experienced in the wider context of the LCA 7. Taking account of the high landscape sensitivity, the overall operational effects of the project at Year 1 on the landscape within LCA 7 would be **minor adverse (significant)** locally within approximately 1km of the LoD, reducing to **neutral (not significant)** for LCA 7 as a whole.

Operation Year 15

Main Project

- 3.7.26 By Year 15, the reinstatement planting associated with the 400kV underground cables in LCA 7 would be maturing and the landscape would be returning to its existing character. The adverse effects on the landscape predicted at Year 1 would diminish and the beneficial effects of dismantling and removing the existing 132kV overhead line would be increasingly experienced. Similarly, the embedded planting around the Stour Valley West CSE compound would be maturing and further reduce its effect on views out from LCA 7.
- 3.7.27 It is anticipated that the effect on the landscape would be beneficial and the magnitude of change would be medium locally within approximately 1km of the LoD, reducing to medium-small when experienced in the wider context of the LCA 7. Taking account of the high landscape sensitivity, the overall operational effects of the project on the landscape within LCA 7 at Year 15 would be **moderate beneficial (significant)** locally within approximately 1km of the LoD, reducing to **minor beneficial (not significant)** for LCA 7 as a whole.

3.8 LCA 8: Essex B3 Blackwater and Stour Farmlands

Baseline

- 3.8.1 Within the study area, this LCA covers the higher plateau above and to the west of the Stour Valley. A small part of the eastern edge of the LCA falls within the SVPA. The plateau is crossed by the A131 which connects Sudbury to the north with Halstead to the south.
- 3.8.2 The flat or gently undulating landform of the plateau is incised by occasional and often steep-sided stream valleys which include tributaries of Belchamp Brook. To the east of the A131, the farmland displays a small-scale organic pattern of pastures bordered by ancient and species-rich hedgerows. To the west of the A131 the land is mainly in arable cultivation with a more regular pattern of medium-large sized fields bordered by hedgerows with hedgerow trees. In places, field amalgamation has weakened the earlier field patterns leading to the creation of a larger scale and more open landscapes.
- 3.8.3 Blocks of ancient woodland are a consistent landscape feature, and include Twinstead Hall Wood, Butler's Wood and Waldegrave Wood.
- 3.8.4 The settlement pattern is one of dispersed farmsteads with some larger hamlets and occasional villages such as Wickham St Paul with its late medieval core, village green, surrounding small-scale fields and architecturally significant All Saint's Church. These are connected by a network of winding lanes which are often associated with species-rich hedgerows that, together with the woodlands, creates a sense of rural isolation as well as enclosing and framing views across the LCA.

3.8.5 Overall, the landscape is largely intact, although the existing 132kV and 400kV overhead lines are a note of discord in the rural landscape.

Landscape Sensitivity

3.8.6 Within the study area, the LCA is completely within the SVPA. Together with the judgements made against indicators of landscape value listed in Table 3.22, this means that the value of the LCA within the study area is considered to be high.

Table 3.22 – Landscape Value of LCA 8

Factors used to Judge Value	Judgements on Value	
	Lower	Higher
Landscape character and quality		██████████
Scenic quality		██████████
Conservation interests		██████████
Recreation value	██████████	
Perceptual aspects and tranquillity		██████████
Associations		██████████
Overall value	The overall value of this landscape is judged to be high.	

3.8.7 The characteristics of the landscape which cannot easily be replaced and therefore are more susceptible to loss or damage resulting from the project are the semi-natural ancient woodland, species-rich and often historic hedgerows, and the landscape around the historic settlements and farmsteads including the small-scale field pattern around Wickham St Paul. The larger-scale arable farmland to the west of the A131 is less susceptible to loss or damage from the project than the smaller scale pattern of hedged pastures to the east of the A131. Away from the A131, much of the landscape has a rural and tranquil quality, which could be diluted by the presence of more pylons. The high coverage of woodlands within the LCA provide opportunities to visually accommodate the lower parts of the project into the landscape.

3.8.8 Existing infrastructure, which has already compromised scenic quality and locally reduced the sensitivity of the landscape, includes the existing 132kV and 400kV overhead lines, which cross this LCA and the A131.

3.8.9 Based on the above and the judgements made against indicators of landscape susceptibility listed in Tables 3.23 – 3.25, the susceptibility of the landscape is considered to be high.

Table 3.23 – Landscape Susceptibility of LCA 8 to a New 400kV Overhead Line

Factors used to Judge susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Holford Rules 4 & 5)		
Landcover (Holford Rules 5 & 6)		
Scale		
Skylines (Holford Rule 4)		
Human influence		
Settlement pattern		
Overall susceptibility	The overall susceptibility of this landscape to a new 400kV overhead line is judged to be high.	

Table 3.24 – Landscape Susceptibility of LCA 8 to an Underground Cable

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform		
Landcover and scale		
Human influence		
Overall susceptibility	The overall susceptibility of this landscape to an underground cable is judged to be high.	

Table 3.25 – Landscape Susceptibility of LCA 8 to a CSE Compound/GSP Substation

Factors used to Judge Susceptibility	Judgements on Susceptibility	
	Lower	Higher
Landform (Horlock Rule 4)		
Landcover		
Field pattern, scale and enclosure		
Human influence		
Overall susceptibility	The overall susceptibility of this landscape to a CSE compound and/or GSP substation is judged to be high.	

3.8.10 When combined with the high value, the sensitivity of the LCA to the project is considered to be high.

Assessment of Effects

3.8.11 The landscape within this LCA would not be affected by construction and/or operation of the main project which is therefore not considered.

Construction

GSP Substation

- 3.8.12 The landscape in LCA 8 would be directly affected by construction of the GSP substation and single circuit sealing end compound, the trenchless crossing to the south of Ansell's Grove, 132kV underground cables and modifications to the existing 132kV and 400kV overhead lines. Four temporary pylons would be present for up to a year.
- 3.8.13 The scale of the activities required to construct the GSP substation would noticeably alter the appearance of the rural farmland within the LoD. However, this would be concentrated in a small area between and immediately to the west of Butler's Wood and Waldegrave Wood which would partially screen the works and limit effects on the character of the wider LCA. There would be a smaller area of disturbance along the route of the existing 132kV underground cables extending between Butler's Wood south across Old Lane to the existing 132kV overhead line.
- 3.8.14 Initial vegetation removal, including a section along the A131 for access, would be followed by the presence of construction compounds, working areas, temporary access routes off the A131 and Old Road, and a concentration of construction equipment and activity, including excavation of opencut trenches, construction of the trenchless crossing to the south of Ansell's Grove and earthworks to create two mounds either side of the GSP substation. Construction of the upper parts of the GSP substation and single circuit sealing end compound would require the use of taller equipment which would affect a wider area the LCA. Opencut trenching for the 132kV underground cables and construction of the trenchless crossing to the south of Ansell's Grove would not be as extensive as for the 400kV underground cables but would still disturb the landscape over an approximately 20m wide temporary corridor within the LoD. On completion of the works, vegetation would be reinstated with the exception of trees which could not be replanted over the 132kV underground cables.
- 3.8.15 For assessment purposes, it is assumed that construction of the trenchless crossing to the south of Ansell's Grove may include overnight working. This would require night time lighting of the working areas on both sides of the trenchless crossing but is likely to be an exceptional and infrequent occurrence.
- 3.8.16 The works to modify the existing 132kV and 400kV overhead lines would affect a small area around each of the existing pylons. The effects of this and the modifications to the existing 132kV and 400kV overhead lines closer to the GSP substation, including pylon removal and construction, together with the associated bellmouths and temporary access routes would be short term and would require little vegetation removal. Most of the work is likely to be at ground level with some limited at-height working, including the use of mobile cranes.
- 3.8.17 The indirect effects would be some localised loss of scenic quality, and sense of tranquillity/rural isolation. Movement of construction vehicles and plant along the A131, Hedingham Road, Watery Lane, Church Road, Old Road, School Road, Colne Road, Fordham Road and Plummers Road would introduce some visual disturbance outside the main working areas. These effects would, however, be short term and temporary and would be in the context of the existing overhead lines.
- 3.8.18 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be large within approximately 500m of the LoD reducing to small when

experienced in the wider context of the LCA 8. Taking account of the high landscape sensitivity, the overall anticipated construction effects of the project on the landscape within LCA 8 would be **major adverse (significant)** locally within approximately 500m of the LoD reducing to **minor adverse (not significant)** for LCA 8 as a whole.

Operation Year 1

GSP Substation

- 3.8.19 The location selected for the GSP compound and single circuit sealing end compound between and adjacent to two blocks of woodland (Butler's Wood and Waldegrave Wood) means that the extent of their influence on the landscape within this LCA would be substantially reduced. Furthermore, the proposed mounds to the east and west would screen the lower parts of the GSP substation and single circuit sealing end compound. At Year 1, however, the proposed planting on these mounds would be too immature to provide any screening or landscape integration.
- 3.8.20 The upper parts of the GSP substation and single circuit sealing end compound would adversely affect the scenic quality of the rural farmland east of Wickham St Mary, but the new infrastructure would typically be seen against a backdrop of woodland and in the context of the existing 400kV pylons, which would limit the effect on overall scenic quality.
- 3.8.21 The modifications to the existing 132kV and 400kV overhead lines means that a new 400kV pylon would be broadly in the same location as the existing pylon which it replaces and, although perceptible on the skyline, would not be a noticeable new feature in the landscape. Similarly, a new 132kV CSE platform pylon would appear broadly similar to the existing pylons which it replaces. The platform would be a perceptible change but as a small-scale addition to the typical 132kV pylon structure its influence on the landscape would be limited.
- 3.8.22 There would be few noticeable effects on the landscape from the trenchless crossing to the south of Ansell's Grove.
- 3.8.23 It is anticipated that the effect on the landscape would be adverse and the magnitude of change would be medium locally within approximately 500m of the LoD, reducing to medium-small when experienced in the wider context of the LCA 8. Taking account of the high landscape sensitivity, the overall anticipated operational effect of the project on the landscape within LCA 8 at Year 1 would be **moderate adverse (significant)** locally within 500m of the LoD reducing to **minor adverse (not significant)** for LCA 8 as a whole.

Operation Year 15

GSP Substation

- 3.8.24 A large amount of embedded planting is included around the GSP substation. At Year 15, the planting on the mounds to the east and west of the GSP substation and single circuit sealing end compound would be maturing and would begin to connect Butler's Wood and Waldegrave Wood, although the areas under the existing 400kV overhead line would continue to remain clear of trees. Reinstatement planting associated with the 132kV underground cables would be maturing and the landscape would be returning to its existing character.
- 3.8.25 By Year 15, it is anticipated that the effect on the landscape would remain adverse but the magnitude of change would reduce to small locally within approximately 500m of the

LoD and negligible when experienced in the wider context of LCA 8. Taking account of the high landscape sensitivity, the operational effect of the project on the landscape within LCA 8 at Year 15 would be **minor adverse (not significant)** within 500m of the LoD and **neutral** when experienced in the wider context of LCA 8.

4. Conclusion

4.1 Summary of Significant Effects

Construction

- 4.1.1 Significant adverse landscape effects during construction are predicted for the landscape within LCA 1d and 1e in the Suffolk Rolling Valley Farmlands, LCA 5c and 5d in the Suffolk Valley Meadowlands, LCA 6a and 6b in the Suffolk Ancient Rolling Farmlands, LCA 7 Essex C8 Stour Valley and LCA 8 in the Essex B3 Blackwater and Stour Valley, however in most instances only a localised part of the LCA within approximately 1km of the LoD would be affected. These significant effects are mainly associated with construction of the 400kV underground cables, trenchless crossings in the Stour Valley, associated CSE compounds and GSP substation. This is because of the large scale of the construction activities associated with these components of the project compared to the smaller scale works to remove or construct pylons.

Operation

- 4.1.2 At Year 1, due to the immediate post-construction effects along the route of the underground cables, there would be localised (within approximately 1km) significant adverse landscape effects on LCA 6a and LCA 6b in the Suffolk Ancient Rolling Farmlands. By Year 15, these effects would reduce due to maturing of the reinstatement planting which would integrate the areas previously used for construction into the landscape. The beneficial effects of removing the existing 132kV overhead line in conjunction with the 400kV underground cables and trenchless crossings would be locally significant for LCA 1e in the Suffolk Rolling Valley Farmlands, LCA 5d in the Suffolk Valley Meadowlands and LCA 7 Essex C8 Stour Valley.
- 4.1.3 At Year 1 through to Year 15, localised (within approximately 1km of the LoD) significant adverse landscape effects are predicted for LCA 2b in LCA 2 Suffolk Ancient Plateau Claylands at Hintlesham. At this location, to avoid crossing Hintlesham Wood, the new 400kV overhead line would move away from an alignment which is broadly parallel to the existing 400kV overhead line, to extend around the north-western edge of Ramsey Wood. In adopting this alignment, it would directly and indirectly influence an area of rural farmland which is not currently affected by high voltage electricity infrastructure.
- 4.1.4 At Year 1, localised (within approximately 500m) significant adverse effects at Year 1 are predicted for LCA 8 Essex B3 Blackwater and Stour Farmland near Butler's Wood. This is due to the presence of the GSP substation and single circuit sealing end compound which, although partially screened by the mounds which form part of the embedded measures would not benefit from the associated planting as it would be too immature. By Year 15, the planting would be maturing and would integrate the new infrastructure into the wider landscape which would substantially reduce its influence on views. As a result, the predicted effect would reduce to not significant.
- 4.1.5 Table 4.1 provides a summary of the results for each LCA and sub area. Where judgements refer to a distance from the LoD or to effects on the landscape within the LoD, this is to reflect the impacts of the works within the main construction or operational corridors.

Table 4.1 – Summary of LCA Landscape Sensitivity, Magnitude of Change and Landscape Effects

LCA Name	Sensitivity	Sub Area	Magnitude			Assessment of Effect		
			Construction	Operation Year 1	Operation Year 15	Construction	Operation Year 1	Operation Year 15
LCA1 Suffolk Rolling Valley Farmlands	High	LCA 1a	Negligible	No change	No change	Neutral	No effect	No effect
		LCA 1b	Small	Small	Small	Minor adverse (not significant)	Minor beneficial (not significant)	Minor beneficial (not significant)
		LCA 1c	Small	Small	Small	Minor adverse (not significant)	Minor adverse (not significant)	Minor adverse (not significant)
		LCA 1d	Large <1km of the LoD Small >1km of the LoD	Small	Medium-small	Major adverse (significant) <1km of the LoD Minor adverse (not significant) >1km of the LoD	Minor adverse (not significant)	Minor beneficial (not significant)
		LCA 1e	Large <1km of the LoD Small >1km of the LoD	Small	Medium-small	Major adverse (significant) <1km of the LoD Minor adverse (not significant) >1km of the LoD	Minor adverse (not significant)	Minor beneficial (significant)

LCA Name	Sensitivity	Sub Area	Magnitude			Assessment of Effect		
			Construction	Operation Year 1	Operation Year 15	Construction	Operation Year 1	Operation Year 15
LCA 2 Suffolk Ancient Plateau Claylands	Medium	LCA 2a	Small	Small	Small	Minor adverse (not significant)	Minor adverse (not significant)	Minor adverse (not significant)
		LCA 2b	Medium-small	Medium <1km of the LoD Medium-small >1km of the LoD	Medium-small <1km of the LoD Small >1km of the LoD	Minor adverse (not significant)	Moderate adverse (significant) <1km of the LoD Minor adverse (not significant) >1km of the LoD	Moderate adverse (significant) <1km of the LoD Minor adverse (not significant) >1km of the LoD
LCA 3 Suffolk Plateau Farmlands	Medium	LCA 3a	Small	Small	Small	Minor adverse (not significant)	Minor beneficial (not significant)	Minor beneficial (not significant)
		LCA 3b	Negligible	No change	No change	Neutral (not significant)	No effect	No effect
LCA 4 Suffolk Ancient Estate Claylands	Medium-high	n/a	Small	Medium-small	Medium-small	Minor adverse (not significant)	Minor beneficial (not significant)	Minor beneficial (not significant)

LCA Name	Sensitivity	Sub Area	Magnitude			Assessment of Effect		
			Construction	Operation Year 1	Operation Year 15	Construction	Operation Year 1	Operation Year 15
LCA 5 Suffolk Valley Meadowlands	High	LCA 5a	Negligible	No change	No change	Neutral	No effect	No effect
		LCA 5b	Small	Small	Small	Minor adverse (not significant)	Minor adverse (not significant)	Minor adverse (not significant)
		LCA 5c	Large <1km of the LoD Small >1km of the LoD	Medium-small	Medium <1km of the LoD Small >1km of the LoD	Major adverse (significant) <1km of the LoD Minor adverse (not significant) >1km of the LoD	Minor adverse (not significant)	Moderate beneficial (significant) <1km of the LoD Minor beneficial (not significant) >1km of the LoD
		LCA 5d	Medium	Medium-small	Medium	Moderate adverse (significant)	Minor beneficial (not significant)	Moderate beneficial (significant)

LCA Name	Sensitivity	Sub Area	Magnitude			Assessment of Effect		
			Construction	Operation Year 1	Operation Year 15	Construction	Operation Year 1	Operation Year 15
LCA 6 Suffolk Ancient Rolling Farmlands	Medium	LCA 6a	Large <1km of the LoD	Medium <1km of the LoD	Medium-small <1km of the LoD	Major adverse (significant) <1km of the LoD	Moderate adverse (significant) <1km of the LoD	Minor adverse (not significant)
			Small >1km of the LoD	Small >1km of the LoD	Small >1km of the LoD	Minor adverse (not significant) >1km of the LoD	Minor adverse (not significant) >1km of the LoD	
		LCA 6b	Large <1km of the LoD	Medium <1km of the LoD	Medium-small <1km of the LoD	Major adverse (significant) <1km of the LoD	Moderate adverse (significant) <1km of the LoD	Minor adverse (not significant)
			Small >1km of the LoD	Small >1km of the LoD	Small >1km of the LoD	Minor adverse (not significant) >1km of the LoD	Minor adverse (not significant) >1km of the LoD	
LCA 7 Essex C8 Stour Valley	High	n/a	Large <1km of the LoD	Medium-small <1km of the LoD	Medium <1km of the LoD	Major adverse (significant) <1km of the LoD	Minor adverse (not significant) <1km of the LoD	Moderate beneficial (significant) <1km of the LoD
			Small >1km of the LoD	Negligible >1km of the LoD	Medium-small >1km of the LoD	Minor adverse (not significant) >1km of the LoD	Neutral (not significant) >1km of the LoD	Minor beneficial (not significant) >1km of the LoD

LCA Name	Sensitivity	Sub Area	Magnitude			Assessment of Effect		
			Construction	Operation Year 1	Operation Year 15	Construction	Operation Year 1	Operation Year 15
LCA 8 Essex B3 Blackwater/Stour Farmland (GSP Substation only)	High	n/a	Large <500m of the LoD	Medium <500m of the LoD	Small <500m of the LoD	Major adverse (significant)	Moderate adverse (significant)	Minor adverse (not significant)
			Small >500m of the LoD	Medium-small >500m of the LoD	Negligible >500mm of the LoD	<500m of the LoD Minor adverse (not significant) >500m of the LoD	<500m of the LoD Minor adverse (not significant) >500m of the LoD	<500m of the LoD Neutral (not significant) >500m of the LoD

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